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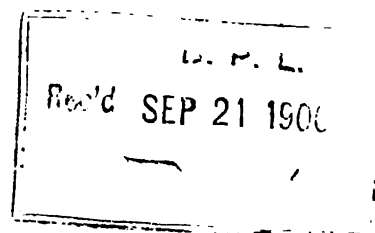
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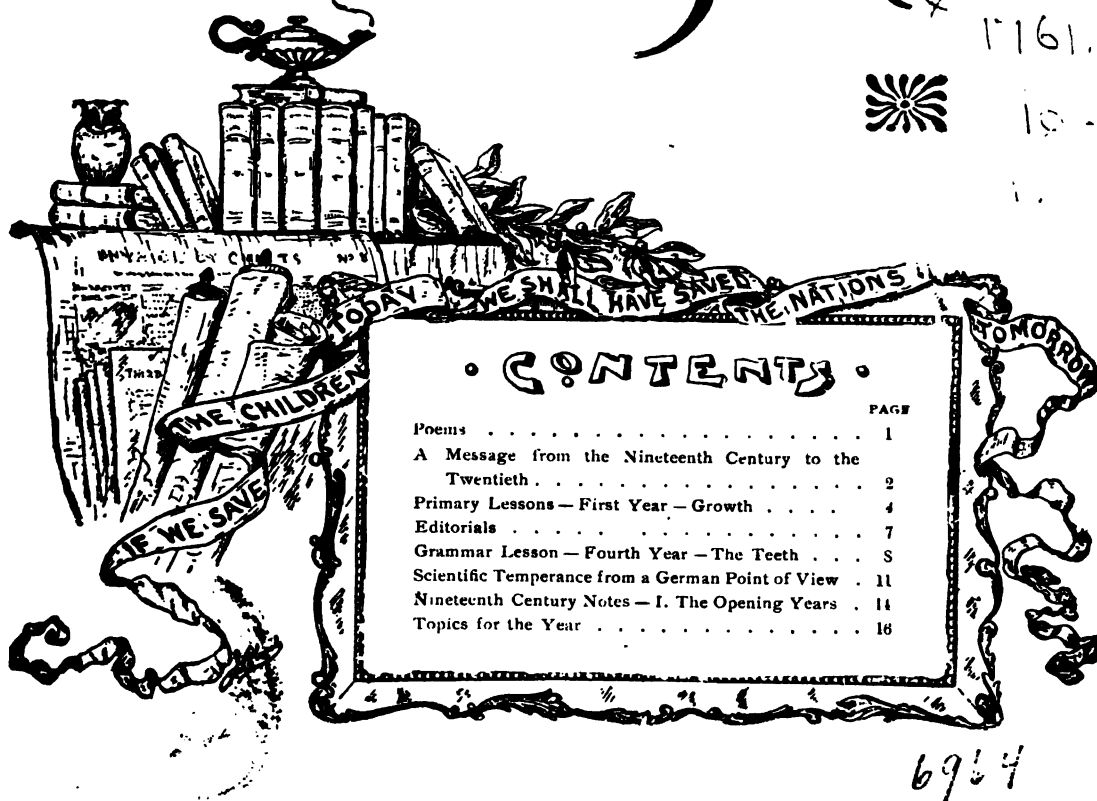


THE SCHOOL PHYSIOLOGY JOURNAL

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VOL. X. No. 1.
SEPTEMBER, 1900.

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School Physiology Journal

Vol. X.

BOSTON, SEPTEMBER, 1900.

No. 1.

SEPTEMBER.

green and gold old Earth of ours, with azure overhung,
and looped with rainbows! grant us yet this grassy lap of thine—
We would be still thy children, through the shower and the shine!

JAMES WHITCOMB RILEY.

MIDSUMMER.

Green leaves, panting for joy with the great wind rushing through;
A burst of the sun from cloud and a sparkle on valley and hill,
Gold on the corn and red on the poppy, and on the rill
Silver, and over all white clouds afloat in the blue.

Swallows that dart, a lark unseen, innumerable song
Chirruped and twittered, a lowing of cows in the meadow grass,
Murmuring goats, and bees that suck their honey and pass;
God is alive and at work in the world; we did it wrong.

HENRY C. BEECHING.

"I love to wander through the woodland hoary,
In the soft light of an autumnal day,
When summer gathers up her robes of glory,
And like a dream of beauty glides away."

LITTLE RED-RIDINGHOODS.

In scarlet clusters o'er the gray stone wall
The barberries lean in thin autumnal air:
Just when the fields and garden plots are bare,
And ere the green leaf takes the tint of fall,
They come, to make the eye a festival!

THOMAS BAILEY ALDRICH.

EARLY AUTUMN.

The world puts on its robes of glory now,
The very flowers are tinged with deeper dyes,
The waves are bluer, and the angels pitch
Their shining tents along the sunset skies.

The distant hills are crowned with purple mist,
The days are mellow, and the long, calm nights,
To wandering eyes, like weird magicians, show
The shifting splendors of the northern lights.

The generous earth spreads out her fruitful store,
And all the fields are decked with ripened sheaves;
While in the woods, at autumn's rustling step,
The maples blush through all their trembling leaves.

ALBERT LEIGHTON.

NATURE'S MUSIC.

The songs of nature never cease.
When winter's wind-songs die,
In come the birds, with hymns of peace,
And joy and love on high.

And when the summer day hath come,
The rustling of the trees
Is mingled with the tuneful hum
Of countless honey bees.

Then as the autumn greets the sight,
Her forces one and all unite
In heavenly harmonies.

JOHN KENDRICK BANGS.

AUTUMN DAYS.

Earth is all in splendor dressed;
Queenly fair, she sits at rest,
While the deep delicious day
Dreams its happy life away.

MARGARET E. SANGSTER.



"What music is in the air?
The song of a sweet-voiced bird,
Thrilled through with praise and prayer."

A MESSAGE FROM THE NINETEENTH CENTURY TO THE TWENTIETH.

SEPTEMBER has come, and with it again the open school and first school days whispering of hope and preparation for a future that is rosy with the glamour of youthful expectation. Whatever else this school year may bring, of one thing we may be sure, that not again in the life of many generations will the end of a school term be so momentously associated with past and future as the one now opening, for as it closes the greatest of all the centuries will end, its marvellous record finished, its story passed into history.

To look back upon human conditions one hundred years ago as contrasted with the present, is to see changes and improvements that the most sanguine optimist in 1800 could not have dreamed possible. These achievements are a prophecy for the future which constitutes an appeal. The gains of this century in discovery, invention, in science, in rapidity of transference of thought and matter, in education and intelligence, can not be simply for the material advancement of the human race. There is a manifest purpose running through all the checkered events of these wonderful years, and to that purpose these events in the long run are seen to become tributary. It is not merely that more money be accumulated and more pleasure come to the few that nature has been robbed of her secrets, that light has been enslaved, that steam and electricity have annihilated space and time, that wheels and fingers of steel have taken the place of human tissues in the world's industries.

These all point to and are tributary to the higher or soul development. Every discovery, every invention, has been in a way revolutionary, breaking down old bondages, and setting free old servitudes to ignorance.

It is self-evident that the public school free to all, and opening to all the printed page with its story of the past and present, has been an immense feeder in stimulating thought, in awakening curiosity, and in energizing invention and discovery. Thus the faithful teacher has had a part in this grand progress which it is our glorious privilege to live to behold.

Benjamin Franklin, at the close of his long useful life, said he sometimes wished it had been his destiny to live two or three centuries hence, not only that he might enjoy the advantages of the discoveries and inventions that he foresaw, but to have his curiosity satisfied in knowing what they were to be. This privilege denied him for the nineteenth century is ours. Discovery and invention have become so common as hardly to excite surprise, but our responsibility because of them is none the less.

A recent writer says, when this century

opened "the curse of drink was threatening the health and morals of civilization," and although here and there men were striving to create a public sentiment against it, "drunkenness was the fashion." When the century was more than half gone the same writer said, "intemperance and pauperism still walk hand in hand through the world." Alcoholism has been a dark, black stream running through the years contemporaneous with the most marvellous progress in other respects that the world has ever known, swallowing countless thousands in its hopeless depths who otherwise might have helped to make this a still more wonderful century. With other narcotic habits which are its feeders, alcoholism is to-day, through its effects on health and character, the greatest menace that faces the civilization of the twentieth century.

Divine Providence in the interests of eternal progress is ever making use of the minds of men to search for the truth needed to meet human emergencies. This we call science.

During the past century science has thrown her searchlight into many a dark treasure cave and now she has come to rescue men from the alcohol blight. When this century opened all supposed the lighter liquors, as wine, beer and cider, safe drinks and so used them. Reformers urged total abstinence for the sake of the weaker brother who could not stop with a little, but still the ruin went on with no gleam of hope lighting its horrors. Laws forbidding the sale of what the people wanted to drink were difficult of enforcement under representative governments. But as the last quarter of this century was about to open, the scientific investigations of Dr. B. W. Richardson and others gave to the world the truth others before them had seen, namely, that alcohol like all narcotics when taken even in small quantities, as in the lighter liquors, is not the safe drink men had supposed, but instead has the power to create that uncontrollable and destructive appetite for more which has cost the world more lives, misery and waste than war, famine and pestilence combined.

Thus the cause of this evil was shown to be at the start popular misapprehension, ignorance as to the real character and effects of alcohol in small amounts as well as large. As long as this false notion prevailed drunkenness would prevail, consequently the remedy must be an educational one, as universal as the people, and applied in childhood and youth before desire for these destructive drinks is formed.

In all the world's history action has soon followed upon the heels of conviction, and never sooner than during the last twenty-five years, as though haste to make way for the coming grander era was in the air. In a little less than seven years from the date when Dr. Richardson, the most influential of the early

investigators, published his findings as to the nature and effects of alcohol, the first law was passed by one of the United States, making the study of the nature and effects of alcoholic drinks and other narcotics, in connection with physiology and hygiene, a required study for all pupils in all the public schools of that state. To-day this branch is a compulsory study for every child and youth in the public schools of our entire country, except in Georgia and Utah which are yet to be won. Fully 16,000,000 children of school age in our country alone are now covered by these laws.

At that time, in 1882, there was not in all the world such a school text-book as our laws now call for. Eighteen years later, the close of the last decade of the century finds nearly every school book publishing house in the land issuing yearly thousands and tens of thousands of good, well graded text-books that teach with other laws of hygiene the nature and effects of alcoholic drinks and other narcotics. These books, now being used by the coming men and women of this republic, are already shaping public opinion and habits for a new future on the alcohol question.

The first telegraphic message that ever throbbed over wires, regardless of distance, was sent in 1844. This message,

"What hath God wrought?"

is "the key-note of the nineteenth century."

The most perfect telegraph or telephone waits in silence concerning your most vital need until you send the message; so God's plan for the redemption through education of our nation and of other nations influenced by us waits your co-operation, school director, school committee, school superintendent and teacher. If you, officers in control of the school curriculum, make no place in the course of study for enough lessons to cover this branch through the years; if you do not provide for pupils' use, by selection or otherwise, text-books adapted to grade that contain the subjects the law requires taught; if you require no tests as to the pupils' proficiency in this as in other branches; if you, teacher, when all this is done, fail in your part, a coming generation will have just cause to point to such failure as disloyalty to a glorious opportunity to serve a higher civilization. If Edison, Fulton, Morse, Garrison, Phillips, Grant, Lincoln, our boys in blue who perished that ours might be an undivided nation, and that Cuba might be free, if all these and tens of thousands more who have dared and suffered for our free institutions had been unmindful of their heavenly visions and call to duty, dark indeed would be the now bright picture before us. Happily our history tells the story of few Benedict Arnolds, few recreants to duty. Free

institutions beget the highest patriotism and loftiest loyalty to duty, when duty is seen as such.

Perhaps you ask: Are these text-books in hygiene and temperance accurate? Yes, so far as truth is yet ascertained they are, and we say this without the slightest fear of any one being able to disprove the statement. For years persons opposed, from reasons of their own, to total abstinence teaching have in vain charged inaccuracy upon these books, but when challenged to point out inaccuracies and present proof of the same they have failed as signally as did Professor Atwater, the data of whose experiments when printed showed that he had by so much proved alcohol to be a poison, as the books teach, and not a food.*

"But you ask for too much time and attention to be given this topic," I hear some one say. Not if you follow the standard which asks, as the minimum, for only one hundred and eighty, or as the maximum, two hundred and forty text-book lessons to be distributed through six years at the rate of thirty or forty lessons per year, with oral instruction for all pupils in primary classes. Only one-fifth of this study in classes below the high school refers to the temperance matter and only twenty pages in high school books. All the rest is physiology and general hygiene. As the subject is graded it is not in any sense a tiresome repetition but a progressive development that furnishes new and interesting phases of the subject.

The battle of Trafalgar next to Waterloo overthrew the Napoleonic power that threatened to make this century a military despotism. As the battle was waging on that fateful October morning in 1805, with the destiny of this century hanging in the balances, Lord Nelson hoisted at the masthead of his ship this signal:

"England expects every man to do his duty."

It was received with tremendous cheering by the whole fleet, cheers that turned to shouts of victory because every man did his duty.

Across the morning of the twentieth century we raise the signal:

For the temperance education of the children the world expects every man and every woman to do their duty.

As this signal meets your vision, school officers and teachers, I hear the answering cheers from hilltop and prairie, from ocean to ocean, from the lakes to the gulf, cheers that will turn to peans of victory as the twentieth century shall pay her tribute of gratitude to the men and women, now little children in your schools, who have dethroned alcohol.

MARY H. HUNT.

* "Appeal to Truth."



GROWTH.

THE Anglo-Saxon race glories in its independence, in the ability of its people to get on by themselves. This has been strikingly true in America, where instead of settling down as beneficiaries of an existing state her people have had actually to evolve a government for themselves. Children of such parents are natural workers in whatever direction their energies lead. It is as easy for them to tame a continent as for an Alexander to conquer a war-horse.

Our system of education strengthens this tendency to independence. In the school of to-day there is a strong movement toward athletics, a call for more gymnasiums, and a widespread demand for the teaching of hygiene.

The boy who has learned to hold his own on the football team, and to square his life by the rules of good health has scored his first point in the battle for success. The youth whose trained mind commands also a trained body is able henceforth to rely on his own efforts. He has become truly independent. Bearing in mind this object of education, it is plain that lessons in hygiene can not be begun too early in our schools if adapted to the comprehension of the pupil.

The subject of growth is a topic which commends itself to little children. They look with admiration upon bigger boys and girls and long for the time when they, too, shall be grown up. This is the moment to give them true ideals of physical development, and show them how to win for themselves the health and grace they admire in others.

WHAT GROWTH IS.

Russell Black always wanted to do what grown-up people did. When he was only five years old he used to dress up in his father's coat and call on his mother and sisters. One Sunday, when he had been to church, he put on his father's gloves and tall silk hat after the service and marched down the aisle gravely, shaking hands with all the people as he had seen the minister do. You can think how funny he looked.

When he was a little older he wanted to be a newsboy. "I guess I'm big enough to sell papers," he cried, "and I can holler as loud as anybody. Why can't I have some as well as the other boys?"

"You'll have to wait till you grow more," said his father, "before I can trust you out on the street alone. You might get run over; then I shouldn't have any boy."

"When will I grow?" asked Russell. "I wish I was big now. Shall I ever be as big as you?"

"I hope so; you are growing fast every day; you are taller than you were last summer; you weigh more; you are stronger, too, and can do many more things. Next year you will be larger still, and by and by if you keep well you will be a man."

GROWTH OF PLANTS.

A morning-glory vine grew in one corner of Mr. Black's garden. It had climbed nearly to the top of the carriage-house. Some of the leaves were broader than a man's hand.

Mr. Black picked one of the ripe, brown seed-vessels and sat down with Russell to examine it. He cut it open carefully with his knife and found three silky little nests inside, each with its two seeds. Next, he took off the outer skin from one of these seeds and within was a tiny green core, covered with a jelly-like substance.

Mr. Black spread out the core and told Russell to look at it through the hand-lens he took from his pocket.

"Why, it has two little bits of leaves," exclaimed the boy, "with a little tail to them."

"That is the root," said his father. "We have the whole plant wrapped up in this tiny seed—leaves, stem and root. Last spring all this large vine was packed away in just such a little seed; now it is taller than I am, and we can both sit in its shade."

"What else can you see which has grown this summer?"

Russell ran about the garden, looking at the flowers and plants as never before. Every few minutes he came back with a new discovery. The heliotrope, salvia, the tall cannas and hollyhocks, even the grass had all grown since the snow went away.

"The trees were here before, weren't they?" he asked. "Do they grow too?"

They walked under a big maple. "What do you see here?" asked Mr. Black.

"Oh, there's a little maple!" shouted Russell; "and here's another, and another, lots of them. Will they grow to be big trees? How do they?"

"Yes, the largest tree you can find was once a tiny seed. As soon as it began to grow it needed something to eat," said his father. "Its

first food was stored up in the seed itself. When this was gone the tiny roots struck down into the soil and drank in the water and other things the plant needed from the ground, and the leaves and stem stretched up into the light and air and got more food in that way. If it has been planted in the right kind of soil, if it gets good air and sunshine, and if nothing happens to injure it, by and by the maple seed will become a tree, or the morning-glory seed a tall plant.

GROWTH OF ANIMALS.

The next day Russell's two little cousins came to visit him. In the afternoon Mr. Black took them all into the country.

They ran about on the grass and picked daisies and golden-rod till their arms were full. Some butterflies flew overhead and Harold darted after them with his net.

"I've got him!" he called, as the others came running up. "Isn't he a beauty?"

"See what I've found!" said Mr. Black, holding up something white and fuzzy.

"It is a chrysalis," he explained, in answer to the children's questions. "Your lovely butterfly once lived in a home like this."

"He began life as a caterpillar which had hatched out of a tiny egg. He was hungry right away but there were tender leaves at hand to make him a good meal."

"When his clothes got too small he split them open and inside was a nice new suit, all ready to wear."

"One day he spun this web all about himself and went to sleep. We'll take it home and watch it. By and by it will burst open and our caterpillar will have grown into a butterfly with wings. Nobody can tell how he grows so beautiful. He eats and breathes and sleeps, and somehow the wonderful change takes place."

"Do caterpillars grow just like the morning-glory?" asked Russell.

"Not just the same," said his father. "They both need food to make them grow, but plants and trees have to stay in the same place and get their food from the air and soil. Caterpillars have legs to walk with and can go for what they need. They have mouths and stomachs too, which plants have not. What else can you think of that grows like the caterpillar, by going after its food?"

HELPS TO OUR GROWTH.

"I wonder which is the tallest of you little cousins," said Mr. Black. "Stand up by this tree and let me measure."

"Howard has a little the start, but Helen and Russell will soon catch up. Shall I tell you how to grow fast?"

"Oh, do," chorused the children. "Will we be grown up next summer?"

"Not quite so soon as that," laughed Mr. Black. "But I can promise you will be much larger than you are now."

"In the first place you must eat the right kind of food. Some things you are very fond of,

like pickles and sweets, not only keep you from growing but make you cross and fretful. Green apples and any fruit that has begun to decay will probably make you sick and thus stop your growth for a time. The best foods for children, and other people too for that matter, are those which build up strong bone and muscle; like whole wheat bread, and butter, milk, oatmeal, meat, eggs, fresh ripe fruit, and vegetables."

"Don't we have to do anything but eat to make us grow?" asked Helen.

"Oh, yes, indeed," said her uncle. "Eating is only one part of growth. You need to run and play for another thing. That's why I brought you out here to-day. The city isn't a very good place for boys and girls. It doesn't give them room enough to grow."

"When we are at home you will have to do the next best thing—stay out in the garden all the time you can. The fresh air and sunshine will make you grow just as they do the flowers, and you must keep your blinds

open, too, so they can get into your rooms."

"Which of these trees do you like better, the straight one or the crooked one?"

"Oh, the straight one," said Russell. "The other is a poor old thing."

"So do I, and I like to see tall, straight boys and girls better than crooked ones. That poor old tree got bent when it was young, and now it couldn't straighten up if it wanted to."

"If you always stand and sit erect while you are children you will grow up the same way, and it will help you grow, too."

"A time when you grow very fast is when you are asleep. Chickens go to rest as soon as



"I can holler as loud as anybody."

it is dark and you know how fast they grow. You ought to run and play enough in the daytime to be as tired as they at night. Then you would sleep soundly, and this rest would help your growth.

A HINDRANCE TO GROWTH.

"I can tell you one thing that will keep you small and weak. It is cigarettes. No boy or girl can smoke them or use any kind of tobacco, and then hope to be as tall and strong as if he had never touched them. They stop his growth and almost always ruin his health as well. Even men who wish to be truly sweet and clean let tobacco entirely alone."

PRACTICAL SUGGESTIONS.

Study with the children the growth of plants

and animals familiar to them. Do this from outdoor life as far as possible, helping them to find out for themselves what conditions are most favorable to such growth. Visit with them the trees and flowers on the school-grounds. Teach the name of

each and how to recognize it elsewhere. Have them look for tiny specimens of the same kind, and notice points of likeness and difference between the two.

On rainy days continue the work indoors by means of the blackboard. Draw some familiar plant in outline, showing roots, stalk, leaves, blossoms and fruit.

Soak a large bean in water. Split it open, and show through a hand lens the leaves and root. Help the children to find how this tiny plant is like the large drawing; how it is different; how it changes as it lives and grows.

Study a cat and kittens in the same way, from life if possible, otherwise from blackboard sketches. Ask how kittens are like the mother cat; how they are unlike. What can the cat do which the kittens can not?

Ask the children to name other animals which

grow. Ask what we call a young horse, a young cow, sheep, fowl, duck, goose, dog, deer. How does each of these animals change as it grows older? How do we take care of a calf or colt to insure its health and growth?

From such a discussion pass to essentials to growth in children. Help the class to think how they should eat, drink, sleep, work and play to aid growth, also what they should refrain from doing to bring about the best results.

Tell them how much Russell wanted to be grown up and how his father told him he must live in order to get his wish.

Stories of strong, noble men and women who acquired their strength by right living, and who used it to help others and to do good in the world, will fill the minds of the children with

noble thoughts, and both consciously and unconsciously they will strive to grow like their ideals.

MEMORY

POINTS.

Young plants and animals grow.

Well children are always growing.

They grow taller and larger

and able to do more. To grow well

WE MUST

Run and play in the fresh air and sunshine.
Eat plenty of nourishing food.
Go to bed early.
Sit and stand erect.
Be outdoors as much as possible.

WE MUST NOT

Eat between meals.
Sit up late at night.
Sit or stand crookedly.
Smoke cigarettes or use tobacco in any form.
Drink tea or coffee or anything which has alcohol in it.

Tobacco is exceedingly dangerous to the general vitality and vigor of the body.—D. S. REYNOLDS, M.D.

Alcohol is especially harmful to children for it interferes with their nutrition. It has never built a cell, nerve, muscle or tissue of the human body.—M. A. GILLETTE, M.D.



"I've got him! Isn't he a beauty?"

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"Deep in the grasses at our feet
The tuneful crickets still sing as sweet
As in the depths of torrid June;
And o'er the dells and sleepy woods,
A reverent hush of stillness broods
As morning dreams into the noon."

EPOCH-MAKING EVENTS.

ONLY a superficial mind will attempt to explain God, but he explains himself in his own great purposes in the record of the years. During the months spanned by this volume of the JOURNAL, the completed nineteenth century will take its place among those of the past, hence a brief résumé of the great events which have marked its rolling years can not fail to be of interest and profit to our readers. We propose to present some of these in each number of the JOURNAL during the coming year under the title of "Nineteenth Century Notes." This month we glance at the opening years of the century chaotic with wars and tumults but brightened by the dawning ideas of liberty.

EDUCATION INFLUENCES ACTION.

EDUCATION implies not only the acquisition of knowledge, but the power to convert it into practical living. No one doubts that instruction in language influences expression, that in arithmetic it guides action in relation to numbers. The same principle holds true in teaching hygiene. To assert that education in the laws of health, including those which relate to the use of alcoholic drinks and other narcotics, will have no influence in securing obedience to such laws is to deny a fundamental principle of civilization. Such education will not always insure obedience to health laws but it invariably tends in that direction, for God has so made the mind that it must feel the power of truth and be influenced by it, although it may sometimes resist.

The established policy of this republic is that the state in self-protection must provide such education for its succeeding generations as will tend to their highest physical, mental and moral well-being. If this policy is a mistake, if teaching the young the advantages of following

the right and the consequences of following the wrong is a failure in method, we must shut up our schools and churches and return to barbarism, for education alone in its broadest sense differentiates the civilized man from the savage.

Long ago the Master gave a rule which has never been gainsaid for testing the success or failure of any plan, "By their fruits ye shall know them." What of the study of scientific temperance when examined by the searchlight of this proposition?

In the opinion of two professors in leading medical colleges, as stated in the "Journal of the American Medical Association":

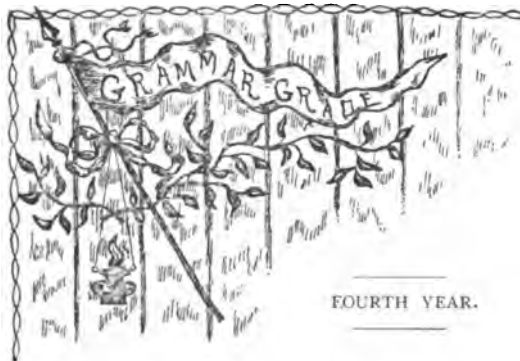
"The people of the present day exhibit more intelligent interest in the discussion of sanitary problems, both public and private, than any preceding generation; and this interest seems to be steadily increasing. It is a most encouraging sign of our advance in civilization and a favorable evidence of our culture at this end of the century, that so large a proportion of the community is demanding exact information as to the positive and economic value of the various alimentary substances offered to man as his daily food.

"As to the cause of this gratifying interest, a large share, in our opinion, in this country may with justice be attributed to the systematic study of physiology and hygiene, including the scientific temperance instruction which for some years has been a part of the regular course of study for all pupils in our public schools."

It is a significant fact that this testimony comes from Pennsylvania which has had longest in force one of the best laws requiring this systematic study of temperance physiology. Such testimony from competent observers could be indefinitely multiplied showing that the adequacy of this plan for insuring a sober and intelligent nation through the systematic training of its children has been abundantly proved. Surely we may take courage and go forward.

A NEW CORRESPONDENCE SCHOOL.

Announcement is made of the organization of the Correspondence School of Highland Park College, Des Moines, Iowa, with Dr. Henry Sabin, ex-State Superintendent of Public Instruction, as conductor. Educators who have followed Dr. Sabin's long and useful career as a public school man will be interested in this new enterprise. His splendid and lasting work already done for education in Iowa, and which is comparable to that accomplished by Horace Mann in Massachusetts, gives bright promise for the future. Of Dr. Sabin's fitness for carrying out his present plans there can be no doubt, and his many friends in other states and sections of the country will watch their development with interest and sympathy.



THE TEETH.

AN Arabian legend relates that Mohammed once asked what had been done with a valuable camel.

"We have turned him loose and commended him to Allah," was the pious reply.

"Tether him," said the prophet, "and then commend him to Allah."

The same practical wisdom should be exercised in caring for the teeth if we wish to keep them. A dentist of wide experience asserts that while but one person in a hundred has good teeth, ninety-nine persons in a hundred might have them with proper attention.

The appearance of the teeth has much to do with the good looks and attractiveness of the individual, and on this ground alone there is abundant reason for giving them the care they need, but more than beauty is at stake. The teeth play an important part in digestion, thus directly affecting the health. If the food is not thoroughly masticated in the mouth, stomach and intestinal digestion will be delayed and often seriously impaired.

Fine work demands the best of tools, and in order that the teeth may be able to meet the demands made upon them they must be kept in perfect condition. Urge upon your pupils the importance of having their teeth examined twice a year by some competent dentist. This will mean a saving in money as well as in the teeth themselves. Study with your class the structure of the teeth. Notice how perfectly they are adapted to their work in the different animals and in man. Find from text-books and observation how best to care for them to insure their preservation even into old age. Show the desirability from every point of view of sound, white, even teeth, and the folly of destroying this perfection by neglect or by the use of tobacco.

SHAPE OF THE TEETH.

Write on the board the names of animals familiar to the class, such as the horse, tiger, sheep, cat, squirrel, pig, cow, hen. Find what your pupils know of the food of these animals.

Which live mostly on flesh? on nuts? on grass?

A carpenter needs different tools from a blacksmith because he has very different work to do. Would we expect to find the teeth of all these animals alike or different? Why? Ask each pupil to choose a single animal from the black-board list and find out for himself:

The kind of food it lives on.

The kind of teeth it has.

How these teeth are fitted for the work they have to do.

Many interesting facts will be brought out by such study; why the cow has no upper biting teeth; why a squirrel's teeth do not wear out when he uses them to gnaw nuts and other very hard substances; why the hen has no teeth at all; what takes the place of teeth in the toad; in the beetle; the fly; the oyster. Encourage the pupils to carry this study as far as time will allow, learning similar facts in regard to less well known animals, such as the elephant, camel, kangaroo, shark, whale, eagle.

The class are now ready for intelligent study of the human teeth. Have ready a complete set of false teeth, also detached teeth of various kinds. What differences in size and shape are noticed in the upper teeth of a grown person? in the lower? Have the class make drawings of the different shapes and explain how each is fastened to its place in the jaw. Ask what teeth they would use in biting an apple, then request them to find from their text-books the name, incisors or cutters, for such teeth. How many of these are there in each jaw?

How does the tooth next the incisors on each jaw differ from these? What are they used for? After the class have found the name canine, belonging to a dog, for these teeth, explain that they are called thus because they are shaped something like the long, sharp teeth which a dog uses for tearing. In the same way study the four bicuspid on each jaw, then the three molars, learning the name and shape of each. Why is the name wisdom-teeth given to the molars farthest back in the mouth? How many teeth in all?

Ask the class how a child's mouth compares in size with that of a grown person. How do his teeth differ in size, kind and number? Have a drawing of the twenty milk-teeth placed on the board and compare with that of the permanent set.

STRUCTURE OF THE TEETH.

Next, examine with the class the teeth as to structure. What does the outside look like? How does it feel to the touch. Find whether it hurts to touch the outside of a tooth. Why is it so painful when the dentist fills the cavity in the inside?

Obtain from the butcher a large tooth from

some animal. Have this sawed through lengthwise. Pass it about for examination, then put an enlarged drawing of the same on the board, showing the different parts, crown, neck and roots, also the different materials of which the tooth is composed, enamel, dentine and cement, and the pulp cavity in which are found the nerves and blood-vessels.

Have the class find which part of the tooth can be seen in the mouth; which part is out of sight; why the neck of the tooth is so-called; which is the hardest part of the tooth; which part is much like bone; the use of the cement, the enamel, the nerves, blood-vessels. Where do we get the ivory of commerce? What use does the animal on which it grows make of it?

WORK OF THE TEETH.

Aesop's fable of the hands and mouth which refused to keep on providing food for the stomach to enjoy will form a good introduction to this topic. Tell it to the class as preliminary to the subject of mouth digestion of foods.

Help all to get a true idea of the close relation which exists between the different parts of the body; that the eyes, for instance, do not see merely for their own pleasure but that the whole person may either enjoy or turn away from what is seen. The legs can not run to an object unless the rest of the body goes too; no more can the mouth or stomach keep for themselves the food taken to them; it is meant for every part as well.

Ask the class at this point to think of the best dinner they ever ate. Who prepared it?

Tell them that some cooks get as much as \$10,000 a year because they understand their business thoroughly and know how to prepare food to the best possible advantage.

We may think of the teeth as something like cooks, because they take the food we eat and make it ready to be digested so that every part of the body can get what it needs.

Have the pupils examine the set of false teeth brought into class and decide from their shape what kinds of food man is fitted to live on. Why are the teeth arranged in two rows facing each other? How do the jaws move when we bite our food? When we chew it? Why should food be chewed very fine before being swallowed?

Put the last question on the board. Before calling for answers, discuss again with the class the real object of eating. Do we take food into the mouth and stomach just because we enjoy its taste, or because every part of the body is continually wearing out and must be repaired? Get from the druggist a mixture of hydrochloric acid and pepsin (pepsin 20 gm.; HCl 12cc.; H₂O 2,000cc.) which represents the digestive fluid of the stomach. Place in two bottles. In the first put a chunk of lean

meat as large as could well be swallowed, and in the other finely minced meat. Keep both in a warm place (99°F). Have the class notice the ease with which the meat in the second bottle is digested, and from this experiment decide as to the necessity of thoroughly chewing food before swallowing it.

The teeth perform other important functions besides helping in the digestion of food. Ask the class why the jaws of an old person who has lost his teeth look small and shrunken. How do the teeth help to give form and expression to the face? How do they aid one's looks.

Call attention to the way in which the teeth help in talking and singing distinctly. Why is it easier for a baby to learn to talk after his teeth begin to come? Why is it difficult to understand a person who has few or defective teeth?

CARE OF THE TEETH.

No feature is more attractive than beautiful teeth, and no other is easier to obtain. The first essential is thorough cleanliness. Impress this clearly on the pupils by every illustration at your command. Have them take the temperature of the mouth with a small thermometer. It will surprise them to find what a warm place it is. Moisten bits of meat and keep at the same temperature as the mouth. How long before a bad odor is noticeable? Have the class deduce from this experiment one reason for the early decay of the teeth, also for the disagreeable odor such teeth often have. How often should the teeth be cleaned to prevent such results?

Using the set of false teeth as a model, illustrate the proper method of brushing the teeth. Let the class decide why it is not a good plan to brush across the teeth; why a rotary motion is necessary; how the back of the teeth can best be cleaned; how often the teeth need brushing to insure cleanliness.

Refer to the perpendicular section of the tooth already examined, and from it show the relative thickness of the enamel and the bony layer. How would cracking nuts or biting off stout thread with the teeth be likely to affect this thin outside layer? Does it grow again when once broken or destroyed. Pour cold water into a glass tube. Empty, and refill immediately with very hot water. Judging from this experiment what would be the effect on the enamel of taking into the mouth very hot and cold food or drinks?

Explain how the enamel may be roughened or broken by the use of metal toothpicks or any hard substance except in the hands of a skilled dentist. Show how silk floss may be used instead to remove particles of food which have lodged between the teeth.

Develop the idea that the teeth need exercise just as much as other parts of the body. We run and swim and row and play ball to develop different muscles of the body. So we must use the teeth in thoroughly chewing our food, to give them health and strength. Crusts of bread, crackers, and similar foods requiring much chewing are excellent for the teeth.

Help the class to tabulate the causes of poor teeth, so far as they can ascertain them from observation and from study of their text-books, then to suggest remedies for each defect.

For instance, many teeth are brittle and break or crumble easily. To guard against this trouble, they should find what the teeth are made of, and what kinds of food will help to make them stronger.

Other teeth are defective because the general health is poor or because the person eats too many sweets, or because he neglects to keep them clean, or because he has used tobacco.

Take up the last point in detail. Have the class find why the teeth of the tobacco-user are seldom white or perfect; what there is in this weed which injures the teeth; how the use of tobacco is opposed to that cleanliness which is so necessary to the preservation of the teeth; how tobacco affects the mouth and throat, and especially their glands.

Put on the board the famous saying of Don Quixote, "A tooth is worth more than a diamond," and ask if any one can afford to injure such a priceless possession.

AUTHORITATIVE QUOTATIONS.

NEED OF CLEANLINESS.

A large proportion of the teeth consists of carbonate of calcium which readily dissolves in weak acids; and decomposing food particles lodged between the teeth develop acids which eat away the tooth slowly but surely. Hence all food particles should be carefully removed from between the teeth, and as this can not always be effected completely it is important to brush the teeth with alkaline substances which will neutralize and render harmless any acid.

—H. NEWELL MARTIN, M.D., F.R.S.

THE TEETH NEED EXERCISE.

It is noticeable that among civilized nations the teeth are becoming less sound and vigorous. This is partly due to the fact that with the use of cooked food, food already ground and softened, there is less use for the teeth, and so according to the law of evolution, they, as superfluous organs, are tending to disappear.

—H. F. HEWES, M.D.

WHEN TO VISIT THE DENTIST.

All persons, old and young, should have their teeth examined once every six months by a competent dentist. Decay will be present

and tartar forming which nothing but a thorough examination will reveal. Professional service rendered in time means high class work, less pain, and great economy.—H. G. VORHIES, D.D.S.

HOW TOBACCO INJURES THE TEETH.

Tobacco injures the enamel, discolors the teeth, debilitates the gums, and taints the breath.—JOHN CUTTER, M.D.

TOBACCO IRRITATES THE SALIVARY GLANDS.

The excessive secretion of saliva induced by the use of tobacco is followed by dryness of the mouth and throat, a natural result of the overwork forced upon the salivary glands. This dryness leads in many persons to the drinking of alcoholic beverages.—ROGER S. TRACY, M.D.

ALCOHOL DRIES UP THE MOUTH AND THROAT.

A noted French physiologist, M. Lancereaux, has found that the use of alcoholic drinks produces a softening of the salivary glands, together with other changes in the tissue composing them. This causes alterations in the saliva itself and accounts for the dryness of the mouth so common among persons addicted to the use of alcohol.

NOT SO STUPID.

Minister—"Well, Johnny, and how are you getting on at the school?"

Johnny—"I've left the schule noo, sir, I'm thirteen past, ye ken."

Minister (impressively)—"Oh, but you know, Johnny, I didn't finish my education till I was twenty-three."

Johnny (coldly)—"Did ye no', sir? Ye mun ha' been an awfu' thickhead."

—[Boston Journal.]

LOST, THE SUMMER.

Where has the summer gone?

She was here just a minute ago,

With roses and daisies

To whisper her praises—

And every one loved her so!

Has any one seen her about?

She must have gone off in the night!

And she took the best flowers

And the happiest hours,

And asked no one's leave for her flight.

Have you noticed her steps in the grass?

The garden looks red where she went;

By the side of the hedge,

There's a goldenrod edge,

And the rose-vines are withered and bent.

Don't you fear she is sorry she went?

It seems but a minute since May!

I'm scarcely half through

What I wanted to do;

If she only had waited a day!

—[Exchange.]

THE IDEAL.

At the inmost core of thy being
 I am a burning fire,
 From thine own altar—flame kindled,
 In the hour when souls aspire ;
 For know that men's prayer shall be answered
 And guard thy spirit's desire.

That which thou wouldst be thou must be,
 That which thou shalt be thou art ;
 As the oak, astir in the acorn,
 The dull earth rend-
 eth apart,
 So thou, the seed of
 thy longing
 That breaketh and
 waketh the heart.
 KATHERINE LEE BATES.

SCIENTIFIC TEM-
 PERANCE FROM
 A GERMAN
 POINT OF VIEW.

SO great a change has recently taken place in the temperance problem of continental Europe that the time is past when it could be claimed that alcoholic drinks, particularly in the form of beer and the lighter wines, had undisputed possession of the field. It is significant that in bringing about this change great prominence is due to German specialists and investigators.

The movement is not specifically religious, nor can we look to preachers and women as the leaders. The most powerful and most uncompromising German advocates of temperance are scientists and physicians. Startled by the fearful havoc made by alcoholism as revealed by statistics, they have set to work patiently to get at the exact causes of crime, insanity, suicide, poverty, degradation, ruined homes, and wretched lives. The investigation of these causes has been pursued with the utmost diligence by scholars whose calling brought them into contact with the various phases of social pathology, such as medical experts and specialists, professors of physiology, directors of hos-

pitals, insane asylums, and prisons. The facts at the command of every investigator are made the basis of the inductions according to the scientific method. These friends of temperance have no thought of forestalling or prejudging scientific investigation which is their weapon and strength. Legitimate scientific results from every quarter are hailed with joy as valuable aids in promoting the cause of humanity. This scientific temperance is unconditionally in favor of total abstinence and directs its most power-

ful attacks against the dangers connected with moderate drinking.

Some idea of this important movement can be formed from the statements of the leaders. Only a few, however, can be given as samples.

J. E. Colla, physician in Finkenwolde, Germany, says :

"The treatment of the alcohol problem in medical literature has recently undergone a complete revolution.

Until a few years ago only isolated physicians ventured to attack the position of alcohol deemed so secure in medical practice ; but now the literature directed against alcohol is very extensive, while the voices defending its use in this or that department are very scarce."

R. Demme, medical doctor, director of the Children's Hospital in Bern, and professor in

the University of that city, says :

"From the standpoint of the hygiene of the people we must oppose with the utmost energy the use of alcohol as a beverage for children." Its use is pronounced physically and mentally an injury.

G. von Bunge is a medical doctor and professor of physiological chemistry in Basle. His scientific work on the specialty of his professorship has given him an international reputation. On the basis of this specialty he discusses the alcohol problem with the calmness and con-



"That orbéd maiden,
 With white fire laden,
 Whom mortals call the moon"

vincing logic of science. The supposed inspiration attributed to spirituous liquors he attributes to a paralysis of the brain. Alcohol so stupefies that the drinker does not realize his actual condition but imagines himself something very different. "His self-satisfaction increases in proportion as he becomes unable to criticise himself." Alcoholic drinks produce inanity, mental vacuity, stupidity, and conceit. Professor Bunge is not a total abstainer for ascetic reasons.

"I affirm that a man who abstains totally from the use of alcoholic drinks does not deny himself anything; he gains in the blessing and joy of life. No drunkard," he says, "was ever saved by the resolution to become a moderate drinker. Salvation consists in avoiding the first glass. The moderate drinker tempts others. It is not the drunkards who lead men astray; they rather have the great merit of deterring others by their example. Those who lead others into temptation are the moderate drinkers. And so long as this temptation continues there will be no end to intemperance and its results, namely, disease, insanity, and crime. Whoever fails to recognize this fact does not understand the history of the warfare against intemperance."

Those who believe Germany but little afflicted with the curse of intemperance should read the statements of this careful investigator:

"Every three years the cost of the beer consumed in the German Empire equals the five billions received from France as a war indemnity, and besides, it swallows every year per inhabitant more whiskey than Russia which is celebrated for its consumption of this article. Year after year there is a frightful increase in Germany in the number of persons who wander into hospitals as sufferers from chronic alcoholism and delirium tremens. Their number in 1885 was 11,974. Consider also that only the smallest number of drunkards enter the hospitals."

He specially emphasizes the hereditary effects of intemperance.

"There run about in Germany hundreds of thousands of children with the germ of intemperance and the inclination to crime, whose heredity also involves disease of the nerves, epilepsy and imbecility."

Dr. A. Fick, professor of physiology in the University of Würzburg, is enthusiastic in respect to the new temperance crusade.

"The battle against alcohol is the most significant phenomenon of our age; more important than all political action, wars, and treaties of peace."

He declares that this battle is directed against wine and beer, as well as against stronger drinks.

Dr. A. Forel, professor of psychiatry in the University of Zürich, and director of an insane asylum near that city, declares that a healthful spirituous liquor does not exist, but that there are only degrees in the danger of alcoholic beverages.

"Together with the worship of the golden calf, alcohol is the real devil of the nineteenth century. . . . When the moderate consumption of alcohol becomes the habit of a people, it leads with mathematical certainty to intemperance, and thus to a gradual poisoning and slow unconscious physical and moral degeneration of a nation."

Leipsic has one of the finest universities of Europe and is a scientific as well as literary and musical centre. P. J. Möbius, a physician who makes a specialty of nervous diseases, and is a teacher in the university, gives this testimony:

"In truth, all the talk about the nourishing quality, the invigorating power, and the hygienic effect of alcohol is nothing but a cloak with which the drinker tries to cover his appetite. No man would care about the insignificant nourishing property claimed for alcohol if there were no pleasure in drinking. . . . The people must be enlightened in order to learn that the old pretence that alcohol nourishes, warms, strengthens, aids digestion, cures, amounts to nothing. . . . Only recently has a correct knowledge of the effect of alcohol been gained, and this knowledge has not yet been learned by all physicians. In our day, however, every physician ought to be ashamed to recommend a medicinal wine (for there is no medicinal wine), or to prescribe wine for the strengthening of children. Those who advise that in case of influenza, etc., liquor be taken know not what they do."

Many similar statements of eminent scholars and specialists might be quoted to indicate the strength of the reaction against the drinking habits of continental Europe. Great stress is naturally laid on the instruction of the young, respecting the physical and ethical effects of alcohol.

An association of German physicians has been organized on the basis of total abstinence. At a large meeting held by them in Munich, Professor Bunge stated that everywhere the young are beginning to enter the total abstinence movement. The eminent Doctor and Professor Pettenkofer, who is called "the creator of scientific hygiene," addressed the assembly on the importance of total abstinence and of fighting alcoholism. German teachers have likewise formed a total abstinence association and publish a journal entitled "Abstinence."—J. H. W. STUCKENBERG, LL.D., Cambridge, Mass.

AN AUTUMN MORNING.

The frost's agleam in the mellow dawn,
And the spider's nets are on the lawn.
And deep in filmy robes of mist
The hills and the silent woodlands lie,
And anon, as the sun comes up the sky
The gray clouds turn to amethyst.

EDWARD WILBUR MASON.

BOOK NOTICES.

PYLE'S PERSONAL HYGIENE: edited by Walter L. Pyle, A. M., M.D. W. B. Saunders & Co., Philadelphia, Pa., publishers. Price, \$1.50.

A distinguishing feature in this manual of hygiene is its compilation of treatises by seven well-known American physicians, upon topics to which each has given special study. The work is eminently popular in its avoidance of technical terms, and the simplicity and ease with which important facts are set forth. The ear, eye, brain and nervous system, the skin, the respiratory and digestive apparatus are among the subjects treated. In each case description of the organ is followed by directions for its care and the prevention of disorders most commonly affecting it. While not agreeing with all of the conclusions embodied, the book contains much valuable matter which we are glad to commend. The principles of hygienic living can not be too widely known, and he who helps to bring them before the public is hastening the advent of healthier generations.

A GOOD VOCABULARY.—A good vocabulary is acquired by reading good books, as well as by hearing the talk of those who express themselves in the speech of educated people. Thought lies back of speech, and the more subjects interest us the more command of language we shall have in which to describe them. They who read scientific books will have a grasp of scientific terms. They who discriminate nicely and use the very best word to say what they have in their minds will consult a dictionary and see what are the similarities or the contrasts of certain words; will choose, as among gems, the flawless ruby or crystal; will not be satisfied except with the exact word which can express precisely the meaning they wish to convey. The reading of good authors lifts our vocabulary from meanness and meagreness to nobility and splendor, enriches our speech with words which are like a beautiful embroidery on the garment of daily life, and furnishes us with allusions, quotations and phrases which are picturesque, apposite or convenient for illustration.—MARGARET E. SANGSTER, in September Ladies' Home Journal.

POWER OF THE TOBACCO HABIT.

The brochure bearing this title which comes to our desk will be warmly welcomed by teachers and others who must fight the growing use of cigarettes among their pupils, and who wish detailed information in regard to the effects of this narcotic as well as convincing arguments against its use. Mrs. Angstman, the author, has definitely met this need, and the forceful way in which she handles the subject commends itself to the practical student. Copies may be ordered through this office, at 20 cents each, 6 for \$1.00.

A SEVERE REMEDY.

A little boy came home after the children had had their eyes examined, with the following note, duly signed by the principal:—

"Mr. Judkins: Dear sir,—Your son shows decided indications of astigmatism, and his case is one that should be attended to without delay."

The father sent the following answer:—

"Mr. Kershaw: Dear sir,—Whip it out of him. Yours truly, Hiram Judkins."—[Detroit Free Press.

CONFUSING.—Druggist: "Pills, my dear?"

Little girl: "Yes, please, sir."

Druggist: "Anti-bilious?"

Little girl: "No. Uncle is."

The collegiate and educational articles that appear regularly in *The Delineator*, from the pen of Carolyn Halsted, are far more than newsy chit-chat. They have the serious intention of either informing the outer world regarding purposeful developments in college methods, or of aiding the student to be more, to do more, and to get more than appears on the surface of college life.

EARLY AUTUMN.

The dark green summer, with its massive hues,
Fades into autumn's tincture manifold;
A gorgeous garniture of fire and gold
The high slope of the ferny hill indues.
The mists of morn in slumbering layers diffuse
O'er glimmering rock, smooth lake, and spiked array
Of hedgerow thorns a unity of gray.
All things appear their tangible forms to lose
In ghostly vastness. But anon the gloom
Melts, as the sun puts off his muddy veil;
And now the birds their twittering songs
resume,
All summer silent in the leafy dale.
In spring they piped of love on every tree,
But now they sing the song of memory.

COLERIDGE.

NINETEENTH CENTURY NOTES.

I. THE OPENING YEARS.

"PROGRESS," says Victor Hugo, "is the fashion of men; the general life of the human race is called progress; and the collective steps of the human race are also called progress. . . . It is the permanent life of the peoples." Every thoughtful observer of past and present events who believes that "through all the ages one increasing purpose runs," finds himself asking at the close of this most changeful of centuries, how much and in what way has the nineteenth century contributed to the "permanent life of the peoples," or in other words what lasting work has it done for the elevation and self-government of man?

Impulses already stirring in the closing years of its predecessor thrilled the century when new. The inventions of Hargreaves, Whitney and Arkwright had given fresh impetus to industrial and consequently to domestic and national interests. Study of physical forces was revealing hidden powers of steam and electricity which were destined to triumph over time and space. In England and America philanthropy and reforms indicated an increased sense of responsibility of man for man, and of equal rights for all. The monarchs in other nations had begun to realize the importance of a better intellectual, social and political system, but as Professor Andrews says, "Reforms were undertaken in the interest of power." There was no thought yet of reorganizing the state for the benefit of the people.

From the memorable days at Runnymede and Rütli, which in the thirteenth century gave birth to English and Swiss liberty, the cause of freedom had been steadily growing. The reformation and the revival of learning, given wings by the invention of printing, spread through all Europe a spirit of revolt against the absolute authority of the church. The hold of the church upon political power was weakened and in England through the domestic infelicities of Henry VIII. entirely shaken off, the king becoming head of both church and state. When the Puritan read that in the sight of God there is no respect of persons, when Shakespeare by his plays and Chaucer by his merry tales showed that kings are but men with all the foibles common to humanity, when from Scotland came the fearless declaration that the will of the people is the only source of power, the doctrine of the "divine right of kings" went down.

Meantime, the disputed right of every man to worship according to his own conscience drove Puritan and Huguenot across the seas, where by the beginning of the nineteenth century the first true republic had been established by the will of a free people.

Continental nations were less fortunate than the English. "Force and the convenience of sovereigns," says Andrews, "had become the supreme law to the states of the eighteenth century." Louis XIV. well expressed the situation when he said, "I am the state." The pitiable conditions among the people of France during the century need no description. But the leaven of liberty was working. England was a standing object lesson to the French visitor of the advantages of representative government. America's success was an inspiration. The keen intellects of France made war on all existing institutions, and kindled confidence in the ability of the masses to govern themselves.

The English and American Revolutions had but swept away barriers to a natural orderly progress. The French Revolution threw that nation into a wholly different course of life. Government, religion, social customs, even the weeks and months of the calendar were changed. For ten years the institutions of France were turned from one mould into another in the effort to find one they would fit. Without training in the ways of self-government, France was forced to try a series of experiments. It was easy to tear down what had existed, hard to build up on new and untried foundations. Parties and leaders rose and fell in quick succession. Liberty became anarchy, and the Reign of Terror before which king, queen, nobles and party leaders went down, was absolutism developed to its highest degree. But when France announced her intention of extending her new principles of liberty to all governments, and commenced by annexing Savoy and Belgium, Europe felt it time to act, and there commenced the wars into whose whirlpool were swept during the next quarter of a century all the great nations of Europe and most of the smaller states, and out of which was destined to come a new Europe, geographically, politically, intellectually and socially.

Nations like individuals can not live forever at high pressure. The succession of weak governments in France gave her no peace at home and kept her embroiled abroad.

In her weakness the strong hand of the Corsican general laid hold upon her destinies. Popular government for the time was over, a ten years' strife had apparently ended in a return to "one-man power."

Whatever may have been his motives, Napoleon did a great work for France. Out of her own convulsive efforts had come the recognition of the equal rights of all men before the law, religious liberty, a plan for national education, and a patriotism that had never before existed. Upon this foundation Bonaparte set himself to build up a mighty nation which should cover not only all Europe, but in his

wildest dreams included India, Africa, America, and even the whole world. He was already strong in the intense personal loyalty and affection of his soldiers who were inspired by the brilliant successes in which they might justly feel they bore an honorable part, and they served him proudly and nobly. The story is told of a young sentinel whom Napoleon found keeping watch on guard one night. Wrapped in his long military cloak, the general thought himself unknown and boldly demanded entrance, not knowing the password. Closing the way with his musket, the sentinel stoutly refused admission. In vain the apparent stranger urged the importance of the message he must deliver. "No one can enter," declared the sentinel, "not even the 'Little Corporal' himself, without the password."

"And who, pray, is the Little Corporal?" asked the stranger.

"Sire, I think it is you," was the reply.

A wise code of laws, able management of finances, plans for internal improvements and universal education, the use of men of all parties which would best serve his purposes, soon gave Napoleon a firm hold in France. He had no sympathy with the ideals of the Revolution. "Sovereignty of the people he recognized . . . by convincing the people that he was ruling them as they wished to be ruled." Yet in divine Providence he was to be the very agency by which liberty was to spread abroad.

The desire of France to extend the blessing of liberty to other nations had been persistently interpreted by them to mean a desire to extend her own power. It was not in human nature not to rebel. Matters were not helped by the ways in which liberty had been manifested in France during her ten years' attempt at a republican government. If "liberty, equality and fraternity" meant wild scenes of almost unparalleled bloodshed, the nations of Europe may be excused for desiring to have none of them. In Napoleon they thought they saw the

Revolution personified and were ready to fight to the bitter end to prevent his success.

Space fails to tell the story in detail. Some one has said that in the different alliances of the first fifteen years of the century nations changed places as in an "international game of stage-coach." Every temporary peace brought a making-over of the map of Europe. Old national lines were erased, new ones made, and perhaps in the next peace treaty these in turn disappeared.

Marvellous military victories crowned Napoleon's career, yet one barrier ever stood in his way. England was omnipresent. "Give me the English Channel for six hours," he cried, "and I am master of the world." It was to crush England that he sought Egypt and India, made treaties with and fought by turn every

continental nation, sold the Louisiana Territory to the United States, and forced upon Europe and America the "continental commercial system." His very success, however, drew the petty states together for mutual aid, stirred a national pride and brought up to the help of rulers the loyal support of their peoples. Nations began to recognize more clearly



"And who, pray, is the Little Corporal?"
"Sire, I think it is you."

the rights of others. Common danger created a common interest, although it was only by repeated reverses that the strength of unity was learned. The work begun by the "battle of the nations" at Leipzig, was finished by Waterloo and the rule of Napoleon with his dreams of a world-wide personal supremacy was at an end.

To outward appearances the Revolution had accomplished little. But the spirit of nationality had been aroused; and throughout the continent nations had come to know each other better, to recognize their mutual rights and responsibilities, to take counsel with each other as to their united duties. Hence, while for the time being the wheels of progress seemed blocked, the eternal principles of liberty and equality had been recognized, and the path marked out for the rule of the majority.

TOPICS FOR THE YEAR.

	GRADE I. ^a	GRADE II. ^a	GRADE III. ^a	GRADE IV. ^a	GRADE V.	GRADE VI.	GRADE VII.	GRADE VIII.	HIGH SCHOOL.
Sept.	Grapes or wine. Growth, height and weight. Tobacco.	The parts of the body; how to care for each.	Proper breathing. Ventilation. Tobacco.	Framework of body; bones, teeth, joints.	Food and drink.	{ Review work of fifth year, especially food and digestion.	Cells and tissues.	{ Review work of seventh year, especially narcotics and food.	Tobacco.
Oct.	Body as a whole. Cleanliness. Water.	Apples or cider. Grapes or wine.	Food and drink. Stomach and digestion.	Wholesome food and drinks.	Digestion.		Bones.		Framework of the body.
Nov.	Apples or cider. Position in walking, standing, sitting.	Food and table manners. Sense of taste.	Parts of the body. Alcoholic drinks.	Stomach and digestion.	Alcoholic drinks and fermentation.	Assimilation and secretion.	Muscles.	Digestion.	Muscular system.
Dec.	Food. Good and bad uses of grain.	Beer and other alcoholic drinks made from grains.	Position. Bones and joints.	Blood. Heart and circulation.	Special senses.	Muscular system.	Nervous system.	Assimilation and secretion.	Heart and circulation.
Jan.	External parts of the trunk. The senses; their uses and care.	Tobacco and cigarettes. Sense of smell.	Muscles. Physical exercises.	Respiration. Tobacco.	Framework of the body.	Heart and circulation.	Organs.	Circulation.	Respiration.
Feb.	Upper limbs; arms, hands, and fingers.	Eye and sight. Ear and hearing.	The blood and its work.	Brain and nerves.	Cigarettes and tobacco.	Respiration.	Skin.	Respiration.	Secretion. Excretion.
Mar.	Head and face. Care of hair, teeth and nails.	Sense of touch.	Brain and nerves.	Alcoholic drinks. Special senses.	Covering of the body.	Nervous system.	Alcoholic drinks and narcotics.	Tobacco.	Food and digestion.
Apr.	Lower limbs; legs, feet, toes.	Review of senses. Skin and cleanliness.	Skin. Special senses.	Muscles.	Bodily organs.	Alcohol and tobacco.	Food.	Excretion.	Fermentation. Cell life.
May	Review food and drinks; tobacco.	Review parts of the body; food; taste.	Review food; stomach; digestion.	Skin. Bathing and care of body.	Review food; digestion; alcoholic drinks.	Review all fifth grade topics.	Review first half of year's work.	Review all seventh grade topics.	Nervous system. Special senses.
June	Review parts of the body; its care.	Review drinks containing alcohol; tobacco.	Review year's work.	Review year's work.	Review muscles; framework; skin; organs.	Review all sixth grade topics.	Review second half of year's work.	Review all eighth grade topics.	Review all topics of the year.

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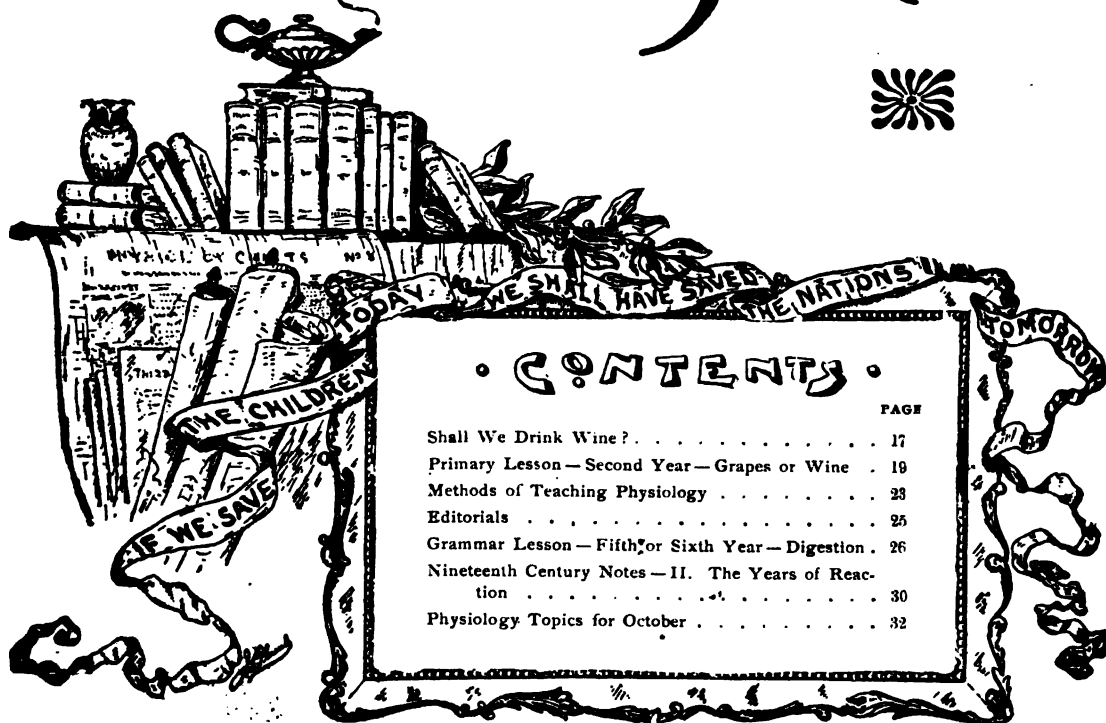
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No. 2.

WORSHIP.

I WANDERED down the dim-light forest
aisles,
With brooding eyes and reverent slow feet ;
I saw the quiet arches overmeet,
More fair than medaeval-building piles.

I traced the shadowy cathedral lines,
And heard the tiny choristers repeat
Their Benedicite, upsinging sweet
Above the surging octaves of the pines.

Most holy high cathedral of the wood,
Whose doors are ever open night and day,
That they who will may enter, it is good
In thy great name to linger and to pray ;

Thence from the silence and the solitude
To go ennobled on the daily way.

EDITH C. BANFIELD, in the Atlantic.

SHALL WE DRINK WINE ?

FALLACIES REGARDING ALCOHOLIC BEVERAGES.

OF all the alcoholic beverages none are held by the majority of civilized people to have the transcendent virtues of wine. No other food or beverage has commanded so much adulation from all kinds and conditions of men. It is amazing, when one stops to consider the matter, how little foundation there is for the average man's opinion as to the value of wine. Good wine, in his estimation, is always desirable. He may abhor drunkenness, look upon the drinking of spirits as dangerous and demoralizing, regard the drinking of malt liquors with contempt ; and yet he may consider the drinking of a bottle or more of wine each day as a duty which he owes to his health, his material success in life, or his social position ; and he is apt to regard the contents of his wine-cellar as one of his greatest treasures. If he is asked the reason for the value he puts upon his wine, he certainly can not call attention to its intrinsic worth, for he is not a chemist nor a physiologist. His answer must be that it cost him a large price per bottle, that it was made at a famous "Chateau" and that the wines from this place are always high priced ; that it was part of the contents of a famous wine-cellar which was recently sold, or that it is many years old and came to him through the will of his father, grandfather, or some other relative.

No error, by the way, is more common than that which gives increasing value to wine with increasing age. This value is looked upon as something very real and potent. New wine

may be thought unfit to drink. The same wine after ten years is considered good and commands a high price ; but let this same wine acquire an age of a hundred years or more, and it now commands a fabulous price and is looked upon as a veritable elixir vitæ. One is gravely told, even by intelligent men, that no matter in what quantity drunk, such wine is never harmful ; it will surely produce drunkenness when taken in sufficient quantity, but even drunkenness produced by it leaves no bad after effects ; good wine is supposed to be tonic and stimulating ; red wine is believed to have the power of making "red blood ;" good wine is supposed to be always beneficial ; when injury is done by wine it is not the wine which is believed to have done the injury, but the suspicion of adulteration is at once aroused.

There is a wide-spread belief that all the common alcoholic beverages are more or less adulterated with harmful substances, and that the damage done by them is not so much due to the beverages themselves as to the poisonous drugs used as adulterants. Many persons willingly drink the currant, grape and other wines made within the precincts of the household who could not be induced to drink the ordinary article of commerce. Indeed, one frequently hears the praises of the domestic article sounded for its wholesomeness and its purity. A few years ago, when one of the southern states assumed the duties of dispensing liquors to the public, a great deal of opposition to the plan was silenced by the assurances on the part of the governor and his followers that under state authority the liquor sold would be pure. Also, in other states in which stringent laws were passed to regulate the liquor traffic, provisions were incorporated to prevent the sale of adulterated liquors, with the hope of lessening the evils attending their consumption. Those who speak of the prevalence of liquor adulterations, however, rarely make any specific charges as to the material used for adulteration purposes. Now and then one hears of spirits being mixed with "impure alcohol," fusel oil, and the like. As a matter of fact, however, the ordinary sophistications of spirits are harmless. They are added with the desire of increasing the bulk, and consequently the profits of the sale of the liquor. For this purpose the most common adulterants are water, to increase the bulk, and caramel or burnt sugar to maintain the proper color ; and these are not only not harmful, but render spirituous liquors less irritating by decreasing the amount of alcohol.

While "impure alcohols" are widely spoken

of by both physicians and laymen as being used to adulterate liquors, and especially wine, no one has yet pointed out the nature of the impurities. The most common and almost only impurity met with in ethyl alcohol, the ordinary alcohol of commerce, is water.

A recent French writer, Mr. Joffroy, calls attention to the fact that many commercial beverages also contain additions to the ordinary products of fermentation, as absinthe, anisette, vermouth, bitters, and the like; that brandy contains other alcohols than ethyl, aldehydes, and acetic ether. He also calls attention to the various volatile substances and salts found in wine and malt liquor, and argues that those as well as the alcohol must play an important part in producing diseased symptoms. There can not be any doubt that absinthe produces conditions peculiar to itself, and it is likely that aromatics like anise are added to various made beverages in quantity sufficiently large to produce notable effects; but he has produced no evidence to show that the ordinary spirits and wine of commerce contain any of the natural by-products of fermentation in quantity sufficient to cause definite pathological conditions.

In conclusion, it must be said that the popular belief in harmful adulterants of common alcoholic beverages is not warranted by any evidence which has thus far been brought to light, and alcohol alone must be responsible for the damage done by them. * * *

Not through drunkenness alone, as that term is popularly understood, but also through "moderate drinking" is the average moral tone, the average capability for exercising the subtlest mental processes through which fine distinctions of right and wrong conduct are determined, immeasurably lowered. The human brain, through countless centuries of evolutionary progress, has acquired a fineness of texture, a sensitiveness to external impressions and a corresponding swiftness of function which make it the most powerful and, at the same time, the most easily injured of all animal organs. It is just upon this fineness of brain texture that civilization depends for the carrying out of her highest aims and purposes, for the solution of the manifold and complicated problems which social progress is bringing forth on every hand; and it is this same fineness of brain texture that is destroyed or rendered impossible of development under the influence of even "moderate" quantities of alcohol daily ingested.

Alcohol exerts its corrupting influence beyond those who drink it. Its evils act as examples to corrupt the impressionable of all classes. The saloon attracts not only those who are inclined to drink, but all kinds and grades of evil-doers. It is as truly the pest spot for the development of crime as is the sewage-con-

taminated well the source of typhoid fever. Is a murder, a highway robbery, a burglary to be committed, it is almost always planned in the private room of a saloon. So are the numberless petty crimes by organized gangs of human vultures who prey upon the industrious public.

In short, the universal consumption of these alcoholic poisons renders impossible the realization of civilization's highest ideals. It does this because it destroys a vast number of useful lives, destroys an immense amount of valuable brain matter annually, increases insanity, incurs the expense of supporting a vast army of non-producers, immeasurably increases crime, brings unhappiness, poverty, and misery to millions, and causes a corrupt administration of the affairs of government. I firmly believe that we have in this country of ours a system of government, natural resources, and a people of the kind to give to the world in fifty years, if the production and importation of alcoholic beverages were absolutely prohibited, a people that for beauty, strength, virtue, material wealth, and happiness would equal the fondest dreams of the millennium.—JOHN MADDEN, M.D., Professor of Physiology in the Wisconsin College of Physicians and Surgeons.

"Why, Mrs. Jamesby!" exclaimed a neighbor across the backyard fence. "Do you beat your own carpets?"

"Yes," replied Mrs. Jamesby. "I don't mind it. It's good exercise."

"I should think you'd have Tommy do it."

"Poor Tommy!" rejoined the good woman, resuming her exercise. "He belongs to a gymnastic class down town, and he's so tired when he comes home in the afternoon that I haven't the heart to ask him to take hold of any work like this."—[Youth's Companion.

THE SOUL OF A BUTTERFLY.

Over the field where the brown quails whistle,
Over the ferns where the rabbits lie,
Floats the tremulous down of a thistle.
Is it the soul of a butterfly?

See! how they scatter and then assemble;
Filling the air while the blossoms fade,
Delicate atoms, that whirl and tremble
In the slanting sunlight that skirts the glade.

There goes the summer's inconstant lover,
Drifting and wandering, faint and far;
Only bewailed by the upland plover,
Watched by only the twilight star.

Come next August when thistles blossom,
See how each is alive, with wings!
Butterflies seek their souls in its blossom,
Changed thenceforth to immortal things.

—THOMAS WENTWORTH HIGGINSON.



GRAPES OR WINE.

"AMERICA needs armor-plated boys," says an exchange, "more than she needs war-ships." Two years ago we gained an easy victory over Spain because of our admirably equipped navy and the wise policy of those leaders who had foreseen the coming conflict and were prepared to meet it.

Character as well as life is at stake in the greater struggle against intemperance which has yet to be brought to successful issue, and here, too, the foe must not catch us napping. The nation's safeguard for the future will be the youth who now throng the schoolhouses of the land, and it is our duty to send them forth iron-clad in those principles of sobriety which alone lead to victory.

In many sections alcoholic liquors are first tasted in the sweet wines of the grape season, and most children sooner or later must be prepared to meet the same form of temptation. We shall be wise, then, to forestall the danger, by explaining to our pupils in the early years of school life why it is unsafe to drink even a little grape-juice after it has been changed to wine, while it is perfectly safe and wholesome to eat ripe grapes.

A FRUIT LESSON.

Bring a plate of assorted fruits into class. These should be as perfect in form and color as can be found, bright red or yellow apples, peaches, pears, oranges and bananas, and clusters of purple, white and red grapes. Add also any other ripe fruits which are found in the neighborhood and can easily be had.

Make this fruit lesson one of observation and comparison. Hold up the fruits one by one. Call attention to the different shapes, letting the class tell which are round, and which oblong or oval. Ask which have smooth skins, which has the prettiest color, which they would like best to eat.

Have the children close their eyes and name the different fruits by their odor. Test them in a similar way with the sense of taste, asking them to hold the nose as well as close their eyes, in order that taste may not be helped by smell. Put drawings of the different fruits on

the board in colored chalk, for the children to copy in water-colors, or with colored pencils.

Find how many know where each fruit comes from. Who has seen it growing? What kinds grow on trees? What do grapes grow on?

If the children know fruit only as they see it in stores and on fruit-stands, show pictures of trees and vines as they appear in blossom and again when loaded with fruit. Tell where each grows, whether in warm countries or in temperate climates like our own.

HOW GRAPES GROW.

After as much general work of this nature as time allows, take up the grape more in detail. Help the class to describe how grapes grow in clusters, something like currants, instead of singly like blackberries or plums; the different shapes of the purple, red and white grapes; the tough skin which surrounds the pulp and seeds. Explain what each part is for—the seeds to make little new plants, the pulp and juices for food, the skin to protect the pulp and seeds. Ask what a grape-vine looks like before it begins to grow.

Show grape seeds. Draw one on the board, asking the class to play it has just been planted. Then ask some one to tell what happens when a seed is put into the ground, and to describe the tiny leaves and the root curled up in their small brown house, ready to walk out and grow as soon as they have a chance. Help the children to recall what they have learned about the growth of other plants; how the root strikes down into the soil after food and water, and the stalk shoots up towards the air and sunshine. The grape grows in the same way. Sketch on the board with colored chalk a grape-vine, showing the leaves, the tiny tendrils by which it climbs and keeps from falling, and the fragrant greenish-yellow blossoms.

Ask what time of year the leaves come out; when we find blossoms; grapes; how long it takes the grapes to ripen.

Tell the children that some things grow very quickly. It takes only a day or two for the first shoots to come up after the seeds are planted in the spring. But when the vine wants to make something very precious, like fruit, it works many months after the little grapes first set to make them large and ripe and sweet.

What are our choicest things? Ask the class what they think most of in the world. How do they take care of their favorite play-things? Why are they unwilling to lend them to careless children? How can the vine take care of its grapes?

Take the class out to see a grape-vine in fruit, if possible. If not, use pictures or blackboard drawings. Point out the tendrils which wind about the trellis, or any support

they can find, to keep the grapes from the ground. Show how the leaves protect the fruit from too great heat and cold as well as from strong winds.

Tell the Bible story of the twelve men Moses sent to explore the land of Canaan, describing particularly the grapes they found and brought back with them. What did this splendid fruit tell them about the land it came from? Do such grapes grow in this country? Ask the class to describe the largest cluster of grapes they have ever seen. Let them tell what they think the children of Israel did with the grapes brought from Canaan. How do we use grapes nowadays? This fruit is guarded so carefully by the vine until it is entirely ripe that we too must be careful to use it rightly. Tell a story to bring out some of the

GOOD USES FOR GRAPES.

The twins were in the kitchen with mamma when the grocer came with two big baskets of grapes. The clusters in one basket were large and beautiful. Those in the other were smaller and only partly ripe.

Elinor and Ray clapped their hands in delight when they saw the lovely fruit.

"What are you going to do with such a lot of grapes?" they asked their mother. "Can't we have some? They look so nice."

"Ripe grapes are very good to eat," said mamma. "That is what these best ones are for, and you may each have a bunch before I put them away for the table."

"I am going to make jelly of these partly ripe grapes in the other basket. They are too

"What else do people do with grapes besides eat them and make them into jelly?" asked Elinor presently.

"Sometimes they can them," her mother said, "or make them into jam or preserves and sauces. Another good way to use grapes is to dry them for raisins."

"Why, are raisins grapes?" asked Ray. "They don't look much like them."

Mamma brought out a bunch of raisins. "Don't you see they grow in a cluster on a stem just as grapes do?" she asked. "Look at the seeds, too, and you will find they are like grape seeds."

"In California and some other parts of our country people raise a great many grapes for raisins. A place where many grapes grow is called a vineyard."

"But what makes the raisins so wrinkled up? The grapes aren't. They are round and full."

"That is because the raisins are dried in order to keep them from rotting. Fresh grapes are full of juice. That makes them soft and round. They would not keep long like this, so when they are ripe men gather them and place them on large racks in the sun. When they are cured they are sorted and packed in boxes ready to be sent away and sold."

"What we call grape sugar forms in the grapes as they ripen, and when these are dried we can see it in little lumps in the raisins, colored by the juice."

"Sometimes, I am sorry to say, people make this nice fruit into wine. This is

A BAD USE FOR GRAPES.

"It is hard for children to understand why grapes and jelly are good to eat while the wine made from the same fruit is bad for them to drink, but I'll see if I can explain it to you because I never want my twins to taste wine, and they must know why to let it alone."

"Wine is made from grape juice but it is very different from the sweet juice we get when we eat grapes. Let us see what makes it different."

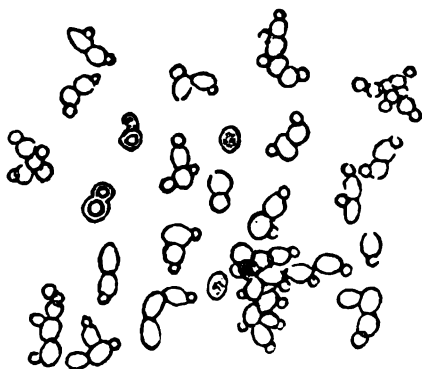
"Find a nice ripe grape in your clusters and rub your finger over it gently. What have you rubbed off?"

"It looks like white dust," said Elinor.

"Part of it is dust," said her mother; "but there are tiny plants growing there, too, so small we can not see them without a strong microscope."

"These little plants are called ferments, and they are alive and growing. They do not need earth to grow in, as most plants do, because they live on oxygen, a part of the air."

"When men make wine they crush the grapes, and the dust and these little ferments fall into the juice. Here they can not get oxygen from the air to live on so they must do



Grape Ferments.

green to eat but they will make very nice jelly, and next winter you may have some of it with your bread and butter."

"Oh, can't we stay and watch you?" chorused the children. "We won't be a mite in the way."

"Very well," smiled mamma, "if you'll sit quietly here by the table, I shall be very glad of such pleasant company."

something else. There is oxygen in the sugar in the sweet juice as well as in the air and these little ferments very soon find it.

"If they just took what sugar they wanted for themselves it would not be so bad, but they spoil all the rest and change the sweet grape juice into a strong biting liquid. This is wine."

"Do we eat the ferments when we eat grapes?" asked Ray.

"Yes, unless we wash them off first. It is better to rinse grapes before we eat them because there is almost always dust on the outside which we do not want in our mouths. But neither the dust nor the ferments would be likely to hurt us as we find them on the outside of the grape. These little plants want only oxygen for themselves.

"What do you think keeps the ferments from hurting the juice in the grapes as they hang on the vine?"

"The y can't get through the grape skin, can they?" asked Elinor.

"No; these little plants have no roots or leaves as larger plants have. When they are on the outside of the grapes they simply breathe the oxygen in the air just as we do. It is only

when the grapes are crushed and these ferments fall into the sweet juice that they begin to make mischief. Now I'll tell you a little more of the harm they do here.

"If I should crush a bunch of these grapes into a glass and let them stand in this warm kitchen a day or two, you would see bubbles rising through the juice.

"The juice would not be so sweet as before. Part of its sugar would be changed to these little bubbles of gas and to a sharp strong liquid called alcohol.

"Alcohol is a poison. If you should drink very much of it by itself it would kill you. When people get it in wine there is usually not enough to kill them, but very often enough to hurt them in some way.

"When a man drinks wine and goes staggering about, or talks loudly without knowing what

he says, it is because the alcohol in the wine has poisoned him.

"Very often people think because wine tastes good, and because there is not enough alcohol in it to make them drunk it will do no harm to take a glass now and then.

"But there is harm in even one glass. This is because a little alcohol, even as little as we find in light wines, has the power to make the drinker want more and more, until at last he may not be able to leave it alone at all. The only safe way to get our grape-juice is to eat it in fresh ripe grapes, and not wait until it has been pressed out and the ferments have had a chance to spoil it.

"Can you remember now why grapes are good to eat, and wine is a bad drink? Play you are the mother and tell me why I must never drink wine. Then we shall all remember to let it alone."

MEMORY POINTS.

Ripe grapes are good to eat and to make into jelly and preserves.

Raisins are dried grapes.

Very tiny plants called ferments are found on the outside of grapes.

The ferments can not get through the unbroken



"I never want my twins to taste wine."

skin of whole grapes.

The ferments on the grapes live on the oxygen in the air.

When grapes are crushed and their juices pressed out, some of these ferments fall into the grape juice.

There is oxygen in the sugar of the sweet grape juice.

The ferments in the pressed-out juice can no longer get oxygen from the air to live on.

They take the sugar in this sweet juice to pieces to get its oxygen.

When the ferments have taken some of the oxygen from the sugar in the grape juice this juice is no longer so sweet and good for food.

Part of this sugar has been changed into a gas and a sharp biting liquid called alcohol.

Alcohol is a poison.

Grape juice is called wine when alcohol has formed in it.

The poison alcohol in wine has the power to hurt those who drink it.

There is danger in drinking even one glass of wine, because the alcohol it contains has the power to make people want more and more wine.

AUTHORITATIVE QUOTATIONS.

FERMENTS ARE FOUND ON RIPE GRAPES.

The bloom on the outside of the skin of the grape is full of ferment germs awaiting an opportunity to feed upon, and so to ferment the sugary juice inside.—W. T. SEDGWICK, PH.D.

FERMENTS CAN NOT HARM WHOLE GRAPES.

The ferments have no power of themselves to penetrate the unbroken skin of the healthy fruit.—LOUIS PASTEUR, M.D.

THE HARM DONE BY MODERATE DRINKING.

The drinker is not conscious of loss of mental power and moral tone, but those who know him best are painfully aware that his perceptions are less keen, his judgments less sound, his temper less serene, his spiritual vision less clear, because he tarries every day a little too long at the wine.—[Medical Pioneer.

WINE DRINKING LEADS TO DRUNKENNESS.

In the Swiss asylum for inebriates, thirty per cent. of the patients had not taken spirits or liqueurs, but had drunk beer, wine or cider.—AUGUST FOREL, M.D.

The common belief that there is no wine or beer, but only spirituous inebriety, is an error. Of the inebriates treated at the Dalrymple Home in England, eight per cent. have been wine or beer drinkers.

—NORMAN KERR, M.D., F.L.S.

Every drunkard was at one time a moderate drinker. Nature has offered us everything necessary for us, but man has set her gifts behind the preparations produced by fermentation which destroy the taste for food, confine

the natural appetite to constantly narrowing limits, and make the pleasure of eating of the teetotaler a terram incognitam to the alcoholist.

—G. VON BUNGE, M.D.

ALCOHOL IN HOME-MADE WINES.

Home-made wines are often stronger of alcohol than the imported, depending upon the amount of sugar added to the fruit. That made from raisins is even stronger than port, and elder wine is as strong of alcohol as cider, or the strongest malt liquors. Hence, home-made wines are far from being the innocent, harmless beverages some of our mothers thought when they told us there was nothing in them to hurt any one, as they knew they had put nothing in

the wine but the juice of the fruit and the sugar to sweeten the juice.—WILLIAM HARGREAVES, M.D.

In my experience as a physician I find the moderate use of light wines very injurious even when taken in moderation, and I have noticed a very marked improvement in health when they have been given up.—W. J. HALL, M.D.

WINE IS A POISON.

Wine is a diluted poison, never necessary, never advisable. There is not a greater or more destructive error existing in human society, than the belief that wine and even distilled spirits do no harm if used in moderation, and may even supply some want of the system. There

is no conceivable want that alcohol can supply. It only lessens our consciousness of the evils to which we are exposed, and thereby impairs our judgment concerning their effects upon us, and our power to relieve them.

—N. S. DAVIS, M.D., LL.D., F.R.S.

THE ALCOHOLIC APPETITE.

One of the worst features of the poisonous characteristics of alcohol is its power, even in small quantities, to create a craving for itself that becomes irresistible. It is therefore the nature of wine to lead to an increasing use of alcohol.—H. NEWELL MARTIN, M.D., F.R.S.



"They cut down from thence a branch with one cluster of grapes, and they bare it between two upon a staff."

OCTOBER.

WHEN merry months that summer
brought
Have laughed and cried themselves
quite sober,
God sends a gracious afterthought
Of silent rapture, called October.

— ELLA G. IVES.

METHODS OF TEACHING PHYSIOLOGY.

THROUGH the experiments of Professor Atwater, and his subsequent statements regarding them, the attention of the whole teaching profession has been directed toward the subject of physiology. Many teachers having an unexplained feeling of dissatisfaction regarding the subject have turned with some relief toward the suggestion that the teaching of physiology in the schools be discontinued.

Where there is so general a feeling of unrest and dissatisfaction there must be some real cause. The question then arises as to what is this cause. Does the fault lie in the subject matter or in the manner of presenting it?

In looking over all the recent school physiologies, and those older ones which have undergone recent revision, it becomes evident that, in general, the subject matter is in accord with the most recent accepted physiological theories and thoroughly up-to-date. The trouble, then, must be with the way in which the subject is presented by the teacher.

Teachers of history, or literature, or language are expected to bring to their work much outside matter, much correlated information to illuminate and illustrate their subject. Has the teacher of physiology this wide knowledge of related subjects?

To answer this question intelligently we must go to the schools where the teachers receive their preparation for teaching.

In most of the preparatory schools, high schools and normal schools of the central and western states, and I think I might also include the eastern states, the teachers of science are selected on the basis of their fitness to teach physics and chemistry, and are then required to teach, as best they can, such biological science as is deemed necessary. A very small proportion of these schools have special teachers for general biology, botany, zoology and physiology, while as a rule, physics and chemistry are taught by those who have had special preparation for teaching these branches which are therefore taught according to the best pedagogical methods, with experimental demonstrations and with more or less laboratory work. These same teachers having had no special work in physiology teach it as they were taught, without the aid of experiments.

So long as the biological sciences receive so

little attention in the training schools, so long may we expect to find something wrong with the method of teaching physiology in the common schools. Even in those schools where special teachers are engaged for the biological sciences they are usually persons who have had their training along the line of general biology and know little or nothing of experimental physiology, and while they teach botany and zoology according to the latest methods they are likely to teach physiology in the old-time way.

One grade school teacher said, "O, I hate to teach physiology, I do not know anything about it; but we have to get through with it some way, so we just read it in class and get along the best we can." Judging from much of the so-called teaching of physiology which we see in public schools this teacher is not alone in her position.

There certainly is something wrong with the sentiment and with the preparation of a teacher who makes such a statement regarding one of the required branches of study. If a teacher did as poor work in history, geography or spelling as she is allowed to do in physiology, she would be asked to resign or to fit herself for the work.

The first step, then, toward the teaching of physiology is the better preparation of the teacher, not alone in physiology but in general biology whence she obtains her idea of the value of life and gets that wider view of the principles which underlie the whole subject. It is impossible to make a subject live and glow if the teacher's knowledge is confined to the contents of the book which she is teaching.

The teacher who has had a thorough preparation will supplement the text-book with many things which will throw light upon the subject. Among the things that might be introduced in the seventh and eighth grades and the high school, are plant physiology, physiological experiments, and domestic economy. Instead of introducing physiology by the time-honored way of bones and muscles, let the pupils first be given beans, peas and corn to examine in their dry state, let them find the parts of the seed, the skin, the food supply, and the germ, and make some chemical tests regarding their contents. (The iodine test for starch is a beautiful experiment on the corn seed.)

While this work is being done, other seeds may be soaking in water and still others germinating in soil. These seeds may be examined at different stages of their development and chemical tests made to see the effect of the germination. The young plant may be examined as to organs and later as to tissues,—active, supporting and protecting. The pupil can learn also something of plant digestion, respiration, circulation and excretion, and something of

plant reproduction and plant economy. When this has been done, the child for the first time sees that he is part of a great plan, and that plants eat, drink and breathe as he does, and that they have analagous tissues which carry on similar physiological functions. To a child taught in this way, the subject of physiology can never again be dull and uninteresting, or mean to him simply "bones and muscles."

A science can not be properly taught from a book alone, but must be taught through the examination of material and the observation of phenomena. Inasmuch as studying the human body in this way is out of the question, the introduction of plant material, which illustrates the same processes, supplies in part this want.

It is never advisable to have vivisections before the pupils or even to show the dead bodies of cats, rabbits or domestic pets in class. Just as good teaching can be done from such material as can be gotten from the slaughter-house or the meat-market, viz., eyes, hearts, lungs, livers, kidneys, stomachs. Inasmuch as most of the pupils are already familiar with these things they do not seem repulsive and are very valuable teaching material. When the subject of foods is reached, the same experiments may be made upon foods for the body as were made upon the food supply in the seeds. Different foods may be tested for starch, sugar, proteid and fat. Later, under the head of digestion, the whole digestive

process can be carried on upon different kinds of food before the eyes of the pupils; and starch, sugar, and meat can be digested in different tubes, and finally united into a mixture similar to the chyme which passes into the intestines.

If the class try digesting cooked and uncooked starch, cooked and uncooked eggs, cooked and uncooked meats, they will have a scientific basis later for their experiments in cooking and will feel that they made their own discovery of the principles which govern cooking.

After such a study of plant-food, and after learning which foods are nourishing to the body

and what parts of the body they build up, the pupils are ready for the introduction of domestic economy.

Under this head, a given amount of money may be decided upon as the salary of the wage-earner and apportioned among the different needs of a family of five, that is, an average family.

Let the pupils themselves decide what these needs are and what share of the money should be allowed for each.

When the amount to be set aside for food has been decided upon, let the pupils plan its expenditure for a week, providing such food as will best supply all the elements that the body requires, and keeping the cost within the stipulated amount.

These menus must state how the food is to be prepared, in order that allowance be made for the cost of cooking accessories.

One of the strongest pleas against the use of alcoholic beverages and tobacco can be made in this connection, for after a boy has struggled to apportion what seems to him a small amount among so many needs, he is loath to rent a cheaper house, or wear less comfortable clothes, or eat less nourishing food for the sake of so useless a thing as a narcotic.

A physiology class which had spent two weeks on domestic economy, making out menus for a family of five persons at a dollar a day, and later at fifty cents a day, was asked

what they had learned from the two weeks' work. The answers were a revelation. Among them were the following: "Good food need not cost so much money as I thought it did;" "it is not always the food that costs the most that does the most good;" "boys ought to know as much about such things as girls;" "to be more careful what I eat;" "not to waste so much." These answers seemed to me to justify the introduction of domestic economy, and while many wondered at first what it had to do with physiology, they all saw its bearing upon the subject before they were through with it.—
MRS. WINFIELD S. HALL, Special Teacher in Physiology in the Berwyn Schools, Chicago.



"The elfish leaves
Dance with thin shadows on the floor;
And the lost children of the wind
Come straying homeward to our door."

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How the goldenrod glows
In the light of the morning!
And the brown bee well knows
How the goldenrod glows
Honey-sweet where it grows
The rough roadside adorning—
How the goldenrod glows
In the light of the morning!
—JULIA MORGAN HARDING.

STOCK OBJECTIONS.

NOT A PRIMARY STUDY.

NO feature in the temperance education laws of the land has been more stoutly contested by the brewers than the requirement that all pupils, especially those in the lower grades, shall pursue this study. It is easy to see the reason. Educational statistics show that sixty per cent. of the children in the public schools of the whole country never go to any school beyond the primary. This sixty per cent. constitutes more than a majority of the whole people of to-morrow who will be left to buy and vote for the brewer's beer if the primary school does not teach them better. Ninety-five per cent. of the children who enter the primary never reach the high school, thus only five per cent. of the whole would get the study if it is left to the high school years. No wonder the brewers oppose this study in the lower grades. That is how it is hurting their trade to-day. Their opposition is always under cover. Certain critics are pulling the brewers' chestnuts out of the fire by saying with owlish wisdom that this teaching in lower grades is unpedagogical. Save us from the scholastic wisdom that considers it unpedagogical to teach a boy not to smoke cigarettes and drink beer.

FINANCIAL INTERESTS.

Another objection raised is that the study should not be pursued because its advocates are influenced by financial motives. Would a parent in deciding whether his child should learn to read stop to find out who would make a penny on the primer his child would use? Unjust accusations are always hurled against

the reformer. The financial interest is on the other side. The children of to-day are wanted to swell the ranks of confiding customers for the brewer's beer to-morrow. In reality the children are wanted for the drunkards of to-morrow, and they are our children. One of the strongest instincts in human nature, parental instinct, has opposed and defeated the effort to keep this study from the lower grades, and it will continue to do so if we only get the facts before the people. The people can be trusted if they understand. "They are never robbed of their rights. They are cheated out of them," said Wendell Phillips.

THE TIME REQUIREMENT.

To prevent the mistaken interpretation that the language "all pupils in all schools" implies that this branch shall be studied every day in every school year, which would be overdoing the matter, the best laws specify the number of lessons each year. But why is it not better to mass this study and let it be pursued one year in the primary, one in the grammar grades, and one in the high school? critics ask.

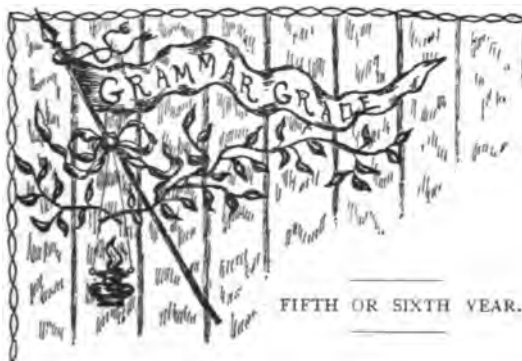
To do this would be to forget child nature. The child is each year forming new habits. Graded instruction must keep pace with and guide these aright, if our work is to be one of formation instead of reformation. The child forgets the lessons of the last year and considers them too babyish for his larger growth unless they are renewedly presented with a more advanced development as he proceeds, as in the case of other studies like arithmetic and geography.

We should lose boys by the former method. The warnings of the primary would not keep the fifth and sixth year boy from becoming a cigarette fiend or drinking cider or beer.

A QUESTION OF MAJORITIES.

Do you say these are pedagogical details that may well be left to school authorities? Not so, for where they are so left experience shows that evasion, intentional or otherwise, often follows. As temperance workers we should understand these points and strive to secure them in the schools, whether or not the particular law of our states contains all these specifications.

If the study is so conducted in the schools that only a minority of the children get this instruction, or if it comes so late in school life that cigarette or other wrong habits are formed before they reach this study, we shall be educating only a minority of that coming public opinion of which we must have a majority to abolish that abomination of desolations, that cancer spot in our civilization, the saloon. We are dealing in futures as we work for the faithful education of all pupils in all our public schools on this great topic.



DIGESTION.

IF there is one thing more than another which needs to be impressed upon the minds of young people it is that they will be, in the long run, what they make themselves. Some are born of better stock, some have advantages and opportunities which do not come to others, but in spite of different conditions and material each has in his own hands the carving of his future.

It is a good thing for boys and girls to sit down occasionally and remember that they or their young friends are to take the places of the lawyers, the bankers, the authors, the farmers, the business men of their locality. It is they, also, or some of their contemporaries, who are to be the town paupers, the criminals, the tramps, the helpless invalids of another generation. Either possibility is open to them and one must be chosen.

A child is made of too valuable material to be wasted or allowed to waste himself. Many parents have put all they are worth into their children's training and education. They have a right to good returns from this investment, to expect that their boys and girls will make the most of themselves in whatever direction their talents lead. Let young people calculate how much they have cost their parents in dollars and cents, and decide whether it is fair on their part to do aught which may impair their health and imperil that success in life of which their fathers and mothers have dreamed.

During recent years hygiene has been introduced into the very beginning of the school curriculum, because our law-makers realize that "it is supreme wisdom to commence life's education with a refining care of the body." It is impossible for the child to realize all at once the value of health and learn how to take care of that most intricate and wonderful machine, his body. Instruction on this topic must be given often, quickened by the fine glow of enthusiasm with which every teacher who feels the responsibility of her position will illumine the subject.

America has been called a nation of dyspeptics. The universal teaching of hygiene in our schools should remove this stigma in the next generation, and give us men and women with digestive organs which are sound and healthy because the children of to-day have learned how to avoid the mistakes of those who preceded them.

OUR NEED OF DIGESTIVE ORGANS.

"If I were a boy with my man's wisdom," says Bishop Vincent, "I would eat wholesome food and no other. I would chew it well and never bolt it down. I would eat at regular hours. I would never touch tobacco, chewing-gum, or patent medicines; never let a year go by without a dentist's inspection and treatment; never sit up late at night unless a great emergency demanded it; never linger one moment in bed when the time came for getting up; never fail to rub every part of my body every morning with a wet towel, and then with a dry one; and never drink more than three or four tablespoonfuls of ice-water at one time."

Put this statement of a wise, deliberate man who has seen much of life and knows whereof he speaks, on the board as your class begin the study of digestion. Later on it should be analyzed and explained. The best way to show why we need digestive organs will be to study first their use in simple forms of animal life. If a compound microscope can be had, place a drop of stagnant water on the slide and show the class the minute animal forms it contains, alive and moving about. Blackboard drawings will do if no microscope is available.

Draw a single cell with tiny projections. This represents the amoeba which is really so small we can not see it with the naked eye. But it is alive and needs food to make it grow. Have the class notice that it has no legs to go after its food, no hands to take it when found, no mouth, no stomach.

Explain, with the aid of drawings, that it moves by thrusting out one of these tiny projections and drawing the rest of its body up to it. It eats by surrounding bits of food, absorbing into itself what it wants, and then casting out the remainder. Its whole body becomes a stomach for the time being, and every part absorbs some of the food.

Draw a caterpillar and help the class to find some of the differences between it and the amoeba. The caterpillar can not take in food at any part of its body. It has a mouth with which it eats and the food is not absorbed into its body as soon as it is swallowed.

Sketch the simple tube which forms its digestive organs, and explain that because the body of the caterpillar is made of many cells of different kinds, and hence is more complex than that of the amoeba, its food needs more

careful preparation before it is ready to be made a part of its body, hence the caterpillar has a digestive tube in which the food remains while being prepared.

Show by diagram how a chicken's digestive tract differs from that of the caterpillar. Help the class to understand why these organs are more elaborate in the chicken. Ask why the chicken's body is made of more parts than the caterpillar. Show why it requires more food; why it takes longer to prepare the chicken's food to nourish every part?

By similar drawings, or from charts in a physiology, show the digestive organs in man. Have the pupils show how this is more complex still, and try to explain the reason. Ask why people need a stomach; what answers this purpose in the fowl; why would not one straight tube, such as the caterpillar has, do for man?

Have a number of physiology charts, and from these show how complex the human body is, of how many organs it is made up, and how widely they differ in appearance. But each must be fed and have its food made just to suit its needs. Hence there must be in man, as in the larger animals, a very long digestive tract in which the food may be kept until it is quite ready for use.

WORK OF THE DIGESTIVE ORGANS.

Have the class find where digestion begins. Then write a list of all organs which have anything to do with preparing the food we eat to be taken up by the blood.

MOUTH DIGESTION.

Call on different ones to explain as far as they can that part of digestion which takes place in the mouth. Have them find what the teeth are for; why they are not all alike; what kinds of food, judging from their size and shapes, man is fitted to eat.

Ask them to study the teeth of different animals; to find how the teeth of the cow, horse, dog, are alike and unlike man's. Why have birds and fowls no teeth? How can they digest corn and other grains which form part of their food without chewing them?

Bring an oyster into class, and have the pupils find its mouth. Why has it no teeth? Let them study also a caterpillar's mouth, a frog's, butterfly's and fish's, finding which of these have teeth, and why those without them have no need of this organ.

Make a study of the saliva. Have the class find where and how it is secreted; where it comes from; what it is for; how the sight and smell of food affects it; what it has to do with our tasting and enjoying food; how it helps in swallowing it.

Give the class bits of well browned toast to chew. Have them decide how it tastes at first, then after it has been well chewed. Have them

find from their text-books that bread is largely made of starch. Then develop the fact that saliva changes cooked starch to sugar. Explain the reason for this, that it is because these sugar particles are smaller and more easily dissolved than the starch, hence can be better absorbed by the body.

STOMACH DIGESTION.

Help the class to explain how food is swallowed; how we know it does not drop from the mouth to the stomach; why it is difficult to swallow a very small bit of anything; how a horse can drink when his head is lower than his throat or stomach.

Ask them to describe food as it enters the stomach, then show how it has been changed since it was taken into the mouth. Ask all to find what kinds of food are not digested in the stomach; then what the juices of the stomach digest which the saliva has no effect upon; and finally what kinds of food have to be passed along still further before being made ready to be taken up by the blood.

Make a study of the gastric juice similar to what has already been learned of the saliva, finding where it comes from, what it is made of, and what changes it makes in food.

Have the motions of the stomach during digestion described, and the reasons for these given. Have the class find how much the stomach will hold, and from this determine how much should be eaten at one time.

INTESTINAL DIGESTION.

Ask the class to make drawings of all the digestive organs, and prepare to explain the special function of each. Have them find from charts the different glands which secrete digestive fluids, and learn why each is necessary. Help them to understand the use of the liver and pancreas and what the intestinal juices are for.

Consider again the kinds of food which are digested after they leave the stomach; find where and how starchy foods and fats are digested; and what finally becomes of the nutritious parts of the food eaten.

Take the class into some factory and show the many people needed to make even small articles. Each has his special part of the task and when all work together it is completed. Help the class to see how the same is true in the digestive system of the body. The saliva, gastric juice, bile, pancreatic and intestinal fluids are each needed to prepare the food for use by our bodies, and all work together harmoniously when not interfered with.

STRUCTURE OF THE DIGESTIVE ORGANS.

Refer to the outline drawing of the digestive organs already on the board. Ask the class to

find of what different materials they are composed, and why all parts could not be made alike. Have them consult their books to find what the teeth are made of, the esophagus, the stomach, the liver, pancreas and intestines.

Ask why muscles are needed in the gullet, why the stomach is made of more than one coat, how these coats differ, what special work has each?

Show by drawings the inner surface of the small intestines. Have the class try to think of reasons why the intestines consist of a series of pouches instead of one smooth tube; and why muscles are needed in their walls. Show the villi and explain their use.

Food taken into the body has to move a distance of twenty-six or twenty-seven feet in passing through the entire system of digestive organs. Set the class to thinking how it can do this. It has no power to move itself, and part of the time it must travel uphill. Use a piece of elastic to show how muscle can move. Then help the class to decide in what parts of the digestive system muscular tissue is needed, and point out such parts.

Have them find from their physiologies the kinds of tissue of which glands are made, and show how this material differs from muscular tissue. Explain that the digestive organs are not loose from the body but are attached by bands of tissue to the walls of the cavity in which they lie. Help the class to decide why this is necessary in order to hold each part in its proper place.

Review this topic by calling on every one in the class to show how the structure of one part or another of the digestive system exactly fits it for the work it must do.

CARE OF THE DIGESTIVE ORGANS.

Call attention to the quotation from Bishop Vincent copied on the board when the class began the study of digestion. Ask one pupil to find physiologic reasons why one should eat wholesome food; another to show how unwholesome articles of diet are injurious to the digestive organs; a third to find why it is essential to chew each mouthful well before swallowing; others to explain the necessity of eating at regular hours; to describe how the digestive organs may suffer or get out of order when tobacco, chewing-gum, patent medicines or any form of alcoholic liquor is used; to show why the teeth need regular care and treatment; why both rest and exercise are essential and how they can effect the work of the digestive organs; how cool baths and gentle friction of the skin help digestion; and why it is undesirable to take ice water into the stomach.

Get as many statements as possible from the class on each of these points and call for illustrations to prove each statement correct.

Refer to the experiments of Drs. Chittenden and Mendel quoted at the end of this lesson, to show why no one who wishes a good digestion and sound health in middle life can afford to use any form of alcoholic liquor in his youth.

AUTHORITATIVE QUOTATIONS.

WINE RETARDS SALIVARY DIGESTION.

Wines have a very marked inhibitory action on salivary digestion, while pure alcohol, even in very dilute solutions, retards the salivary digestion of starch.—L. F. COPE, M.D., St. George's Hospital.

BEER RETARDS DIGESTION.

Lager beer in so small a quantity as three teaspoonfuls at a meal has been found to retard digestion to a very marked degree.—DRS. CHITTENDEN and MENDEL, Yale University.

ALCOHOLICS DO NOT NOURISH.

I do not think that anything should go into the stomachs of any of the animal creation (man is an animal) unless it is really for his good. The human stomach in a perfect state does not need wine or beer; real nourishment only should be put there. If the stomach is disordered, there are plenty of other things that are fully as healing and less dangerous to use. Everybody knows the danger of moderate drinking of fermented or distilled spirits. The very smell of the stuff is dangerous.—J. M. MESSENGER, M.D.

ALCOHOL HINDERS DIGESTION.

Is alcohol a digestive? No; its ingestion produces a passing excitation, interrupts the proper action of the muscles of the stomach, because alcohol acts as an anæsthetic after having irritated the walls of the stomach, and it drives the blood to the skin and so hinders the action of the gastric juice.—DR. BIENFAIT of Liege.

EFFECT OF ALCOHOL ON THE STOMACH.

Alcohol's action on the stomach is two-fold. Chemically, it coagulates the albuminous contents, precipitating those in solution, including the digested peptones which have been prepared for assimilation, as well as the pepsin itself. Physiologically, after the first vascular and muscular excitement, if the dose be sufficient, muscular contractibility is arrested, flaccidity and dilatation resulting, and active digestion is interfered with.—CAPT. P. W. O'GORMAN, D. P. H., Cantab.

As long as there is alcohol in the stomach, there will be no digestion. Food remains unchanged in the stomach for hours.

—J. ROSENTHAL, M. D.

VERY LITTLE ALCOHOL DIMINISHES DIGESTIVE ACTIVITY.

A very common belief is that alcoholic liquors aid the process of digestion, but the results of experimental evidence are against this. Drs. Chittenden and Mendel, of Yale University, have carried out a series of experiments in which digestive fluids were allowed to act upon various food substances of the proteid class under definite and constant conditions. It was found that when so small a quantity as two per cent. of alcohol was present the digestive activity was always diminished, and it was uniformly decreased in direct ratio to the quantity of alcohol used. The experiments with brandy, gin and rum all showed decreased digestive action. Three per cent. of claret showed decreased activity in every case. As the common intoxicants in use seldom contain less than five per cent. of alcohol, it will be seen that they all possess the quality of retarding, instead of aiding digestive processes.—W. N. EDWARDS, M. D., F. C. S.

So small an amount of whisky as one per cent. diminished the digestive activity in three experiments, and to the average amount of over six per cent. In larger amounts the diminution of the digestive activity was very decided, amounting in one case to twenty-one per cent. with six per cent. whisky. So small a quantity of sherry wine as one tablespoonful taken with a full meal will diminish digestive activity in seven cases out of eight.

—J. H. KELLOGG, M.D.

ALCOHOL RENDERS PEPSIN INERT.

Chemically, alcohol interferes with the normal process of digestion by rendering the pepsin inert so long as the alcohol is present.

—JOHN MADDEN, M.D.

ALCOHOL INJURES PANCREATIC DIGESTION.

The effect of alcoholic liquors on the digestive activity of the pancreas is even more injurious than on the stomach. Two per cent. of alcohol

absolute was found by Drs. Chittenden and Mendel to diminish digestive action as much as ten per cent. Whisky, which is very commonly drunk with meals as a cure for indigestion, was found to be especially injurious, ten per cent. producing a diminution of nearly seventeen per cent.—[Medical Temp. Review.

DECEPTIVE CHARACTER OF ALCOHOL.

The fallacious feelings of ease, warmth and comfort which cause the unwise, excessive eater to think that alcohol has aided the digestion of the mass within, are mainly deceptive feelings, due to the benumbing influence of the anæsthetic poison in deadening the uneasiness and pain of indigestion.—NORMAN KERR, M. D., F. L. S.



"She will bring thee all together,
All delights of summer weather
And the heaped Autumn's wealth of Ceres'
golden reign."

TOBACCO INTERFERES WITH DIGESTIVE PROCESSES.

Tobacco impairs nutrition by interfering with the processes of digestion and assimilation. Pure tobacco is one of the most injurious and fatal plants known to botanists. The nicotine it contains is a deadly poison.—[Potter's Materia Medica.

TOBACCO CAUSES DYSPEPSIA.

The effect of all narcotics, of which nicotine is one, is to lessen the secretion of gastric juice, giving rise to dyspepsia. The salivary glands are excited by tobacco to over-secretion, and if the saliva is swallowed, it conveys the poisons to the stomach, causing irritation and inflammation of the mucous membrane.

—W. H. RILEY, M.D.

CIGARETTES HINDER DIGESTION.

Cigarette smoking injures the digestion, and it tends to check growth. It gives a lad false and silly notions, and it does not bring him into good company.—TITUS M. COAN, M.D.

Teacher.—"What is an octopus?" Small Boy (who has just commenced to take Latin), eagerly: "Please, sir, I know; it's an eight-sided cat."

NINETEENTH CENTURY NOTES.

II. THE YEARS OF REACTION.

ALL the world breathed more freely when it knew that the

"Man raised up to sway the world to do, undo,
With mighty nations for his underlings"

was far away on the island of St. Helena. The Revolution had apparently spent itself and to the men of the time was a great disappointment. They had been too much a part of it to see fully what it was to mean for the world. The nations, worn by two decades of war, eagerly welcomed peace and its pursuits. How peace should be secured became a vital question in international councils. The course of events in France had made statesmen and rulers of other nations distrust the ability of the people to govern, and to see in any expression of popular demands a menace to the public quiet and security. So when the diplomatists came together to agree on a settlement of European affairs they bent everything to this one end, the maintenance of peace.

Tallyrand, the clever French statesman, set forth the doctrine that only those governments were lawful which had been in possession of their power through "a long succession of years." This gave an excellent excuse for dismissing all the emperors, kings and governments set up by Napoleon. The Bourbons, Louis XVIII and Ferdinand VII, came back to the thrones of France and Spain, Pope Pius VII to the Papal states, while in Sardinia, Portugal, Holland, and many of the little German principalities, the old reigning families were restored, but without conditions or limitations to prevent oppression, or requirements to recognize the rights and needs of their peoples.

But the seeds of liberty had been too generally scattered during the confusion of the Napoleonic wars to permit rulers to disregard it for any length of time, as some of them very soon discovered. The world had moved since 1789. Promises, more or less sincere, of constitutional and national reform made especially to the states of Germany and Italy had won their loyal support in the struggle against the supremacy of Napoleon. They expected these promises to be kept. Well might the diplomats be warned:

"Conscious that the nerve
Of popular reason, long mistrusted, freed
Your thrones, ye Powers, from duty fear to swerve!
Be just, be grateful; nor the oppressor's cruelty
Reviving, heavier chastisement deserve
Than ever forced unpitied hearts to bleed."

While the restored monarchs were not required to grant reforms and wider liberties, several of them did so, but the progress of reform was still hindered and chiefly by the will and persuasions of one man, Metternich, prime

minister of Austria. "In his mind," says Professor Andrews, "there was no difference between liberalism and anarchy. Each stood for independence of authority and the destruction of governments." Therefore seeing in the ideas of the Revolution a menace to public safety, Metternich wished to prevent not only Austria but all Europe from being influenced by these ideas. His purposes were helped on by what was known as the Holy Alliance, a league of nations formed soon after the fall of Napoleon, nominally for the purpose of "preserving peace, justice and religion in the name of the gospel," but really to support the reigning monarchs of Europe and to put down anything at all resembling a rebellion or revolution.

The agreement of the Holy Alliance was soon interpreted to mean that its members were bound not only to maintain peace between states but to interfere in the internal affairs of any state whose peace and stability seemed threatened by popular uprisings. Of Metternich's relation to the principle here laid down, Mr. W. R. Thayer says:

"Metternich found it all the easier to direct kings whose common interest it was to uphold the paternal system therein approved. He exerted his influence over each of them separately; if the monarch were obdurate, he wheedled his minister; if the minister were wary, he prejudiced the monarch against him. . . . To resist all change—that was his policy; to keep the surface smooth—that was his peace."

There proved, however, to be many things to ruffle this surface. Popular discontent with the restoration of the old order of things was not to be stifled by the wishes of a few statesmen of Europe. Italy, disappointed over the broken promises of national unity and independence, was soon seething with rebellion against Austrian rule and perfidy. Spain, humiliated by Napoleon, elated by the constitution and liberties granted in 1812, and plunged almost into despair by the restoration of all the signs of despotism by Ferdinand VII after 1815, soon showed her discontent openly, while France, ever restless, saw with great dissatisfaction the return of the monarchy accompanied by the nobles whose disposition toward popular rights had changed little in the years since 1789.

This discontent was fostered by the many secret societies which flourished throughout southern Europe, especially that of the Carbonari. Its members were originally political refugees in the mountains of Italy, and took their name from the mountain charcoal-burners. The societies as organized worked for different ends in the different countries, but all had before them the definite policy of opposition to despotism, or any return to the old conditions which the Revolution had swept away. Hence in

Italy, the Carbonari were against Austria and everything Austrian; in Spain, against the bad government of Ferdinand VII, and in France, against the restoration of the Bourbons. Individual liberty, constitutional government and national independence were their watchwords.

The first important outbreak of the Carbonari was in Naples in 1820. Spain had succeeded in forcing its king to accept the old constitution of 1812, and Naples, quick to follow her lead, at once demanded that a similar constitution should be granted by her king. To satisfy the people for the moment, the king promised the constitution, binding himself with a most solemn oath to support it, an oath which he never kept nor intended to keep. Austria, alarmed at what seemed the success of most dangerous liberal principles, called a European Congress, and joining forces with Russia, sent thousands of soldiers against unfortunate Naples, which soon fell and with it its constitutional government.

Meantime, affairs in the new world were not at a standstill. Taking advantage of Spain's weakness and bad government, her South American colonies, even before Napoleon reached the zenith of his power, began a struggle for independence that eventually stripped her of all her American possessions save the West Indies, Argentina, New Granada, Venezuela and Ecuador. Later, Peru, Chili and Mexico fought their way out to self-government. The "Holy Alliance," pleased with its success in repressing the Neapolitan and similar European outbreaks, was disposed to interfere also in this purely Spanish matter, but England who had never shown much cordiality to the principles of the Holy Alliance, soon made it clear that she intended to recognize the independence of the Spanish colonies, while the United States, now near the close of its first half century of independent life, boldly entered the international arena and by the Monroe doctrine shut out forever all attempts to make American territory a field for European interference. Thus was a whole continent dedicated to liberty and a long step taken away from the principles of Metternich and the Holy Alliance.

Perhaps no event in the decade following

1815 more stirred the world than the Greek struggle for independence which eventually drew to it the sympathies of a large part of Europe. Stirred by an intellectual revival which gave new life to the desire for independence, and exasperated by the atrocious cruelties of their Turkish oppressors, the Greeks rose in 1821, entering upon a contest which showed that all the old Greek spirit of bravery, hardihood and endurance, as told in epic and fable, still lived. What school-boy has not been thrilled by the familiar and stirring lines of Fitz-Greene Halleck:

"Strike for your altars and your fires,
Strike for the green graves of your sires,
God and your native land."

or the other prophetic words of Campbell in a Grecian battle-cry:

"Our land the first garden
of liberty's tree,
It has been and yet shall
be the land of the free."



"To resist all change—that was his policy; to keep
the surface smooth—that was his peace."

As it became evident that Greece was engaged in a life and death struggle, money and men from every nation began to find their way to her support. England in particular made no concealment of her sympathy. Gradually France and Russia, for reasons of their own, came to her side, and under their joint protection the independence of Greece was achieved. Prussia still stood by Austria, under the failing leadership of Metternich, and later Russia rejoined them, but the power of the Holy Alliance as an accepted principle governing European affairs

was broken, and when Belgium, in 1830, sought to regain her independence from the control of Holland, the united action of England and France in refusing to help Holland subdue her, secured her independence so, that to quote words of a late writer, "the more liberal and progressive notion of non-intervention, supported by England and France, won its first great victory over the reactionary ideas of Austria and Prussia."

The year 1830, therefore, found the world far advanced in the path of progress from the point reached in 1815. Portugal, Belgium and Greece had been set apart to independence. France had overturned the absolutist monarchy

of the Bourbons, substituting the "citizens monarchy of Louis Philippe," while in the new world struggling but courageous republics were added witnesses of the truth that henceforth true liberalism was to be fostered and trained, not repressed and crushed by the great nations of two continents. The effort to shape the destinies of Europe after the patterns of the eighteenth century had failed.

"Revolution," says Goldwin Smith, "had rolled away the stone which the Holy Alliance had laid upon its sepulchre and had recommenced its march."

The period had been one of definite development in every direction. Industry and commerce were stimulated by new inventions and processes and the better transportation made possible by steamboats and railways. By 1830 slavery was nearing its end in England's dominions, and was receiving telling blows in America. Parliamentary reform was being urged in England to insure a more just system of representation, and the condition of the working classes was a problem already attacked. In the world of letters, America had passed the period when a Sydney Smith could inquire contemptuously, "Who in all the world reads an American book?" for Irving and Cooper had already charmed that world with their tales, while Bryant and Poe and Hawthorne had also appeared on the scene. England had her Scott, Shelley, Byron, Keats, Moore, Southey and Wordsworth; Germany her Goethe, Hegel and Humboldt.

The far-reaching results of the Reformation were beginning to be manifest. The true inspiration that it brought had been not lost, as its early friends had thought, but merely obscured for a time by the smoke of battle. Out of the shadow of apparent defeat was slowly but steadily emerging the clear light of a better day for the world. Material, intellectual, social and political gains each helped on the others, and all marked a step forward in the progress of humanity.

WHAT HE PETITIONED FOR.

A little Chicago chap who has a good deal of human nature in his make-up was saying his prayers before retiring one evening, and, after asking a blessing for the various members of the household, he concluded as follows: "And don't forget to bless Brother Jim and make him as good a boy as I am."—[Ex.]

"Johnny," said the schoolboy's mother, "do you like your arithmetic?" "No'm; I think the influence of that book is unwholesome and depressing." "Why?" "Because it is full of horrible examples." And his mother was so stunned that she forgot to punish him.—[Ex.]

THE MAPLE'S THOUGHTS.

THE thoughts of all the maples who shall name,

When the sad landscape turns to cold and gray?

Yet some for very ruth and sad dismay,
Hearing the north wind pipe the winter's name,
Have fired the hills with beaconing clouds of flame;

And some with softer woe that day by day,
So sweet and brief should go the westward way,

Have yearned upon the sunset with such shame,
That all their cheeks have turned to tremulous rose;

Others for wrath have turned a rusty red,
And some that know not either grief or dread,

Ere the old year should find its iron close,
Have gathered down the sun's last smiles acold,
Deep, deep into their luminous hearts of gold.

—ARCHIBALD LAMPMAN.

TRUE NATURE STUDY.

It is better to hunt with a camera than a gun; to study life in its freedom rather than to watch its struggles in captivity. In speaking of nature study for children, Henry S. Salt says:

"They should be taught to cage and imprison no animal or bird, but to respect the freedom and self-development of all other sentient beings, even as they claim the like privilege for themselves.

"Boys and girls should be early initiated into those habits of quiet watchfulness by which the true nature lover, as distinguished from the collecting scientist, is always able to win the confidence of nature, to learn the secret of field and forest with far more penetrating eye." A butterfly is but an ephemeral creature, but its little life was given to it by God, and it should not lightly be deprived of its freedom.

CARL'S WAY OF OBEYING.

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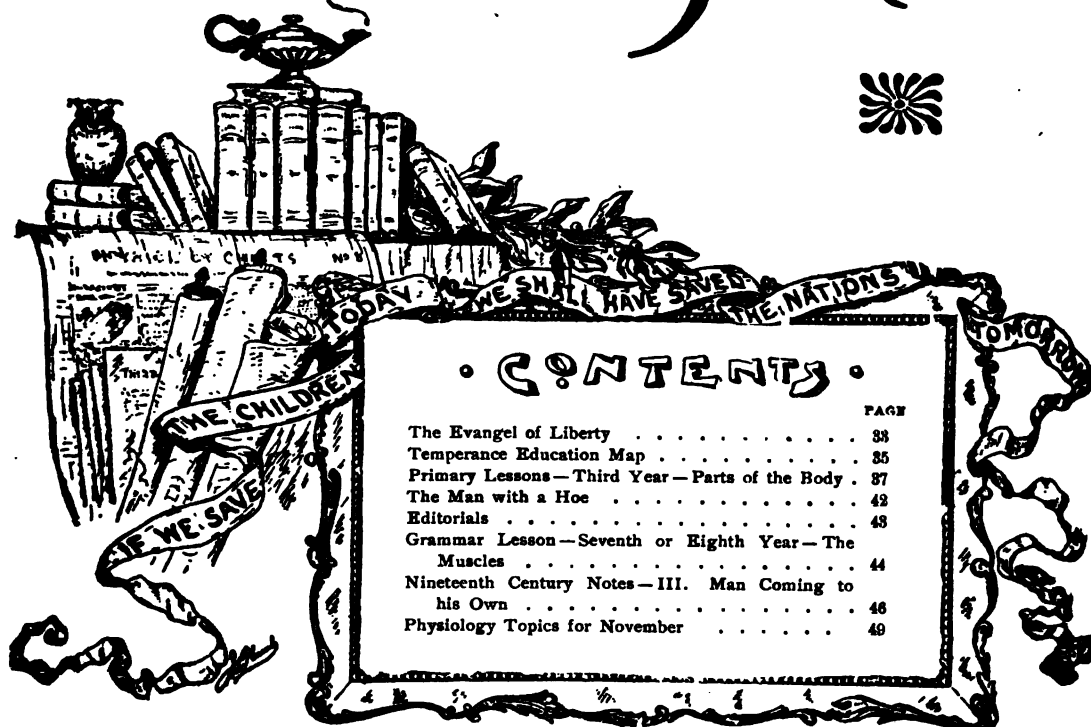
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School Physiology Journal

Vol. X.

BOSTON, NOVEMBER, 1900.

No. 3.

A PERFECT DAY.

It is a day lost from some perfect June
And set within the middle of November.
It has the golden mystery of September,
And the blue skies of a warm summer noon.

There is a low wind singing an old tune,
Sung once by tender winds that I remember;
The soft, high sun burns like a crimson ember
Deep in the blue flame of the air . . . So soon
A gray and lonely morrow will arise,
This fair day well is worth the holding fast.

Behold ! how dreamily the mute sea lies
Below ; how seabirds lazily drift past ;
And how the mountains, white for centuries,
Shine on the sky . . . O day, that thou
might'st last !

—ELLA HIGGINSON.

THE EVANGEL OF LIBERTY.

"CHANGE is the watchword of this world,"
said Baron von Humboldt, the great
naturalist.

From prolonged study of the natural world
he saw no permanency in all its realm. The
seed of to-day becomes in the to-morrows the
plant, the flower, the fruit and again the seed.
There is nothing permanent in nature. Her
very rocks and mountains crumble, change, and
take new forms under the action of the tooth
of time.

Human life is as changeful. In the swiftly
coming to-morrows the little children now in
your homes will become full-fledged and leave
you with the empty nest as they speed away to
their own futures.

The very home which to you seems so secure
is only temporary. It may be founded in love
and godly virtue. Such homes are the corner-
stones of the republic, nevertheless they are
only for a time. The homes of to-day and their
inmates will soon give place to other homes
with other inmates.

Change likewise pervades society. "How
changed our village, town, city, church, or
social circle !" is a universal expression from
people in middle life.

The same law holds among nations. New
men and new measures rapidly succeed each
other. As we look back over the centuries and
jump the years after the fashion of history,
nation seems to be treading on the heels of
nation with reckless rapidity.

Do you say this is a gloomy presentation of
an unpleasant truth? There is no gloom if we

look at it rightly, and we need to do that to
understand our times and our duty to them.

Nothing could be more pathetic than the
utterance of the old Briton before the Christian
religion had been taught his countrymen. His-
tory tells us that he said :

"So seems the life of man, O King, as a
sparrow's flight through the hall when a man is
sitting at meat in winter-tide, with the warm
fire lighted on the hearth but the chill rain-
storm without. The sparrow flies in at one
door and tarries for a moment in the light and
the heat of the hearth fire, and then flying
forth from the other vanishes into the wintry
darkness whence it came. So tarries for a
moment the life of man in our sight, but what
is before it, what after it, we know not."

The Christian's hope changes all this. In
the light of that hope life is seen to be a develop-
ment, and its changes to be in reality steps in a
progress that lead the God-loving soul not out
into the blackness of an unknown wintry night,
but into an existence the glory of which eye
hath not seen nor hath the poor human heart
with its earthly limitations power to conceive.

From a superficial point of view, the passing
of empires may seem a long line of funeral
processions varied with the annals of the birth
and growth that have preceded the death of
nation after nation.

But looked at from the standpoint of deeper
vision into the eternal order, all these changes,
the uplifting of thrones, the overthrow of kings,
emperors, and dynasties, and the building up of
new powers, are seen to be parts of that pro-
gress which is marching through the centuries,
all tributary to, and circling around the one
central figure in all history, the God man, the
author of all progress.

Look swiftly at a few of the events prepara-
tory to his coming. They are germane to our
topic.

The world sunk in the darkness of barbarism
had to be made ready for Christ's kingdom,
therefore Persia could not overthrow Greece
two thousand four hundred years ago, because
thereby the oriental darkness of the China of
to-day with its Boxers, which Persia then rep-
resented, would have crushed out the Grecian
civilization that prepared the way for him who
said, "If thy brother smite thee on the one
cheek turn to him the other also." Greece
could not destroy Rome in her infancy, for the
Caesars with their eagles were destined to unite
all people in one language and one nation, thus
furnishing a wide-open door for the philosophy
of Calvary. The vicious and cruel power of

Rome in turn was broken in the interests of that liberty which is God's thought for humanity. The Spanish Armada that would have destroyed England and Protestantism was dashed in pieces by the winds of heaven. Victor Hugo said of Bonaparte's almost realized dream of world conquest, "The great man had to go that the great age could come in." The great age is our age, our times to which all that has gone before is tributary.

Only a superficial mind will attempt to explain God, but he explains himself in the story of the years. This story shows that ancient and mediæval nations rose or fell just in proportion as they, unconsciously to themselves, opened the way for the philosophy of Calvary.

This philosophy implies the highest development of the individual as a child of God and heir to eternity. Slowly that idea has worked its way through the centuries. That men exist to fight the king's battles and pay the king's taxes, and women to be the mothers of more men to fight and pay taxes was the ancient and mediæval idea which has given place to the declaration on which our republic is founded, that "all men are born with an equal right to life, liberty and the pursuit of happiness."

It is a glorious thing to get one of God's great truths formally stated in a national document. Men may not fully grasp it in all its applications, but if you can only get it down in black and white, and into men's heads, human life will sooner or later adjust itself to it. That declaration of equal rights in our constitution is a part of the philosophy of Calvary. It is only another way of saying, "Thou shalt love thy neighbor as thyself." That it might have a place for its realization, an arena where it could be worked out, God saved this western hemisphere with all its boundless resources unoccupied until, two hundred and eighty years ago, those conscience men and women taught by Providence in the school of suffering were ready to come here and plant this republic.

The applied philosophy of Calvary has given all the people in these United States religious liberty, and men political liberty. But our fathers, brothers, husbands and sons will yet see that for one-half the population to make the laws which all must obey, but on which the other, non-criminal and equally intelligent half can have no vote, is not equal liberty but a relic of barbaric ages when power was exercised by the few over the helpless many.

The seething of the principle of equal liberty, applied with the scourge of war, freed this country from human slavery. The philosophy of Calvary will yet overthrow in our land the dominion of alcohol, which is a worse scourge than African slavery ever was.

In the light of the civilization of this age we need not hesitate to say that no man has the

right to manufacture or sell a substance whose nature it is to injure and destroy the buyer. Such a thing is not allowed except in the case of alcoholic drinks. Severe legal punishment falls upon the man who knowingly sells diseased meat, poisoned milk or other like injurious foods. This is wise and as it should be. On the other hand, to allow a man to be legally enriched by the sale of what destroys his customer violates that principle of justice to all that holds human society together, that differentiates a community of civilized beings from savage hordes which prey upon each other.

In order that as temperance workers we may understand the problem we are trying to solve, we need to answer intelligently the question: Why is the manufacture and sale of alcoholic drinks made an exception to the rule governing civilized society, that the dealer shall not sell as beverages that which destroys and kills the buyer?

The first reason is the great difference between the effects on the buyer of the poisons in bad foods as contrasted with the poison in alcoholic drinks. Diseased meats and poisoned milk create in the consumer no craving desire for more, but a repulsive dislike; therefore, nobody to gratify a diseased appetite is trying to buy tainted meat, rotten fruits, or spoiled milk in spite of the law forbidding their sale. Public opinion condemns their sale and no man wants to buy them, hence there is no demand.

When the same is true of alcohol our work as temperance reformers will be accomplished.

But in the case of alcohol the situation is radically different. When taken even in small amounts, as in the lighter liquors, alcohol has the power to create an uncontrollable and destructive appetite for more, therefore, if any is used more is craved and the demand is thus established. Alcohol does not repel like bad foods. It woos and wins. Its power to bind its consumers to itself as devoted friends ever ready to defend it is one of its poisonous effects. Where such friends are in the majority public opinion defends it and majorities vote for its sale.

If we could only educate a generation before they begin to take alcohol at all to know and understand that it has this dangerous power, even when taken in small amounts, and to realize how unsafe it is to begin its use, we could in time get public opinion right, for the old drinkers die off fast and truth imbedded in the mind of the child sticks and influences after life. If the places of the old drinkers could be filled with intelligent total abstainers the reform would be accomplished. Such universal temperance education as will insure this is the only chance, the only hope of a permanent and radical reform for the temperance cause.

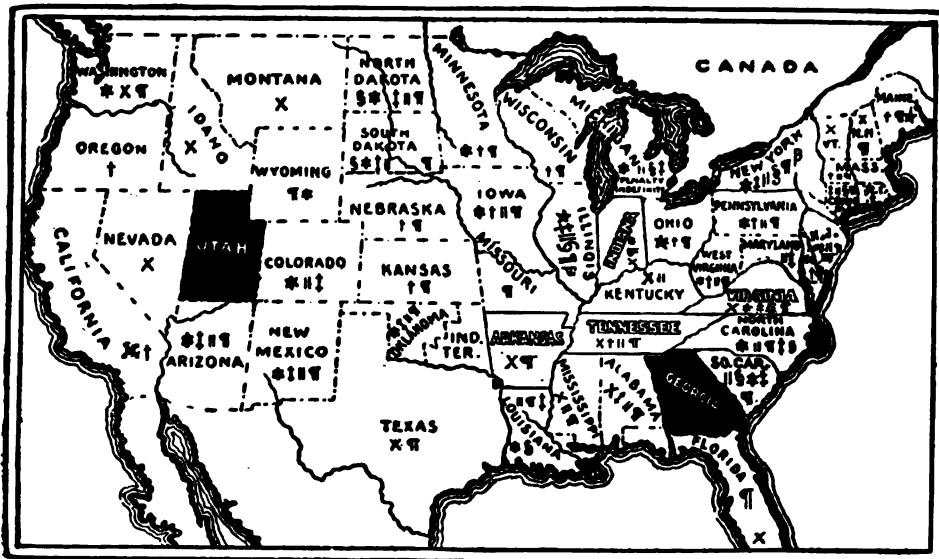
Other methods, God bless them and their advocates, are palliatives and needed to ameliorate the horrible results of this evil, but we must search for prevention. The hour demands it. The day is dawning for that higher civilization of which the saloon is no part and we must not miss our way in hastening its coming.

This is a government of the people, of majorities, and we can get nothing from legislation in advance of majorities. Do you say it is a government of parties, manipulated by politicians? But parties are powerless unless

indignant people, and no public man representative of the people can go far in advance of his constituents. He must either bring them up or they will retire him to the rear.

A commander in the civil war thought his color-bearer was getting too far in advance of the regiment in the face of the enemy, and called him back. Planting in the soft earth the staff from which waved the stars and stripes, the brave color-bearer answered, "This old flag never goes back. Bring the men up, bring the men up!"

TEMPERANCE EDUCATION MAP OF THE UNITED STATES AND TERRITORIES.



States in White have a Temperance Education Law. Those in Black have NONE.

EXPLANATION OF MARKS.—X The cross signifies that Scientific Temperance is a mandatory study in public schools.

* The star signifies that this is a mandatory study and that a penalty is attached to the enforcing clause of this statute in the state or territory to which it is affixed.

† The dagger signifies that the study is not only mandatory but is required of all pupils in all schools.

‡ The double dagger signifies that the study is required of all pupils in all schools and is to be pursued with text-books in the hands of pupils able to read.

|| The parallel indicates that the study is to be taught in the same manner and as thoroughly as other required branches.

§ The section mark indicates that text-books on this topic used in primary and intermediate schools must give one-fourth or one-fifth their space to temperance matter, and those used in high schools not less than twenty pages.

¶ The paragraph indicates that no teacher who has not passed a satisfactory examination in this subject is granted a certificate or authorized to teach.

≡ Three lines indicate that text-books on this topic shall give full and adequate space to temperance matter.

β The beta signifies that a definite number of lessons for each school year has been made compulsory.

There are 16,000,000 children of school age in the United States under Temperance Education Laws.

they represent majorities, or can, by withdrawing votes from one side, throw the other side into power; but if that other side is against our reform nothing is gained. The politician trims his sails to the popular current with the skill of the most expert mariner. Get all the people right and our reform will suffer nothing at the hands of either politician or party. No politician under our form of government can continue a long political life in the face of an

When we have brought the people up the politician will be all right.

In repressing wrong in our republic everything depends upon the people. What progress has been made in our country in bringing the people up on this vital question? The temperance education map shows that with the good hand of our God upon us, the people of this entire country, except in Utah and Georgia, have enacted laws which require the nature and

effects of alcoholic drinks and other narcotics, as a part of the study of hygiene, to be taught in the public schools.

It is eighteen years since the first of these laws was enacted. In states where the strongest statutes have been longest in force the good result of this study is most marked. The facts taught in the schools that alcohol injures brain and brawn and thus diminishes trustworthy ability is recognized to-day by all forms of business. To-day railroads will not employ a man who patronizes the saloon when either on or off duty. He is not wanted in bank, shop, manufactory, store or any form of employment. All this has come about since we began the agitation twenty years ago, for scientific temperance. Trade and commerce quick to scent danger to profits, have caught the truth carried home from the schools that alcohol injures working ability.

The brewers at their annual national meeting in June, 1900, at Atlantic City, New Jersey, report their industry as "staggering to its own ruin," and the position of the brewing business "as a desperate one." They report further that in a season of prosperity rarely equalled in the economic history of our country, the brewing business instead of responding as always before with like commercial prosperity, is declining; that their output was nearly 1,000,000 barrels less during the last fiscal year reported than the year before. The year before that, they reported five breweries in one city sold at sheriff's sales. They charge this decline to the war tax. But evidence points to the fact that the people are in reality drinking less. These are only straws but they show the trend of the current. They are results we might expect from the educational training going on through the schools over our country.

It is estimated that there are \$957,000,000 invested in the liquor interests in this country. That this vast capital should seek to protect itself against whatever hurts the sales of its products is to be expected. Hence we must

not be taken by surprise at opposition. I marvel that there has not been more opposition to this scientific temperance instruction movement.

Every reform has had to breast opposition, and by it has grown and gained. That wise old philosopher, Marcus Aurelius, said, "That which seems to oppose only helps the right, and that which stands in its way hastens a successful end."

Discussion is born of opposition, and in discussion error is exposed and truth, set in new light, cuts its way to that human conviction which results in action. Apathy and indifference are the signs of danger.

In nineteen states and territories the law requires the study of temperance physiology to be pursued with text-books in the hands of pupils who use text-books in other studies. Congress was the first legislative body to require, in 1886, these text-books for pupils. There was then but one set of books we could indorse. But there had been rushed upon the opening field from twenty to twenty-five books so loose and deficient in temperance teaching that we could not indorse them. If we had we never should have had better books, but meantime there was much to endure of unjust accusation and impugning of motives from those who failed

to see why books that denounced drunkenness but said nothing of the danger of beginning to drink should not be indorsed.

Launch new truths that rebuke popular customs, stand by them, push them, not only refuse to retract or modify, but hold those truths aloft and urge their application, and many will accept, but enough will oppose to give you a taste of martyrdom.

"Count me o'er earth's chosen heroes,—
they were souls that stood alone,
While the men they agonized for, hurled
the contumelious stone."

(Continued in December Journal.)



"From the warm concave of that fluted note
Somewhat half song, half odour forth did float
As if a rose might somehow be a throat."



PARTS OF THE BODY.

A ROMAN vase was once on exhibition which at first sight delighted the beholder with its exquisite coloring and graceful lines. But a nearer glance revealed imperfections. Some careless hand had shattered it into fragments, and although these bits had been skilfully put together the cracks and seams could not be entirely hidden.

The most marvelous piece of workmanship in the whole world is the perfect human body. When its every organ is sound and in proper working condition, it challenges and holds the admiration of the sternest critic. But if it be marred by disease, by neglect of health laws, by intemperance, the scars will remain and it is at best but an apology for a man or woman.

Sooner or later every child must learn this lesson for himself in the costly school of experience, but the truth may not come home in time for him to profit by it. This is the great reason why hygiene and temperance have been early introduced into our public schools — that the child may know how to direct his activities into right channels, and conserve his powers of body and mind while they are still unharmed.

(1)

USES OF THE DIFFERENT PARTS.

The third year primary pupil needs to get some idea of the body as a whole. He knows that he has a head, trunk and limbs, that he can see and hear; he must next realize that he can use arm, or leg, or head, not because each is complete in itself, but because it is a part of him. The main work in physiology during this last year in the primary grades should be to show the connection between each part of the body studied and the individual as a whole.

The child's first question about an object relates to its use. "What is it for?" he queries. Direct this spirit of investigation toward the parts of the body, and show that each has some special work to do in order to make up the perfect whole.

THE HEAD.

If we were to draw a person's picture what part should we begin with? Get opinions from

the class as to why the head is the most important part of the human body. Write on the board the question, What can we do with the head? Ask every one to give an answer and write the different statements below the question.

How do we find out what is going on in the world? Which of the five senses are found in this part of the body? Have the class draw a head in outline showing the position of the different sense organs. Call upon various ones in the class to state what each of these organs is for, and what it does for us; what we learn through our eyes and ears; what we can find out only through the senses of taste and smell; and with what parts of the head we can feel.

Ask the class to name parts of the head which can do more than one kind of work. What do we do with the nose, for instance, besides smell? with the mouth besides taste?

What parts of the head have not yet been named? Point to each—the skull, crown, back, sides, scalp, hair, ears, face, forehead, eyes, temples, cheeks, nose, mouth, chin. Have a list made of these parts and call for reasons why each is needed. As the different parts are given include them in the blackboard drawing until the sketch of the external head is complete.

Have the children pass their hands lightly over the parts of the head. Which parts are hard to the touch? Which parts soft? Help them to think of reasons for this.

Consider the shape of the head. Why is a rounded surface less likely to be injured than one with sharp corners? What do the hard outside parts of the head protect?

Help the class to compare the human head with that of one or more of the lower animals. Have them find how the two are alike; how they differ; how each is exactly right in its place.

(2)

THE NECK.

Show the picture of a frog. Ask how its head is joined to its body; then in what different way our heads are connected with our bodies. Form an isthmus on the sand-map and explain why this is called a neck of land. Show the importance of the neck in allowing the head to move freely. Have the class find in what ways the head can be moved. What other animals besides the frog can move the head very little or not at all? What animals can move the head less freely than man? more freely?

Have ready pictures of all the different animals you can find. Call attention to the neck of each. Let the class find which have necks larger and thicker than man's; which are longer; which are more movable; which less so; which are of a different shape. Show how each is suited to the animal it belongs to.

Have the class find the different parts of the neck—the throat, sides and nape. - Show a chicken's neck from which all the meat has been removed, and call attention to its jointed structure. Help the children to think of reasons why a person's neck should be jointed rather than made in one piece.

(8)

THE TRUNK.

What is the largest part of the body? Ask the class to describe the body trunk, then the trunk of a tree. Explain that one meaning of the word is the main part of anything; then ask why this name is given to a part of the body.

Help the children to decide what the trunk is for. Ask where the food we eat goes. Show the location of the stomach.

Have all rise and place their hands on their chests while they take several deep breaths. Help them think of the reason why the chest continually rises and falls. Give the name of the parts of the body which receive the air breathed in, if the word lungs is not already known.

Have them find where the heart is. Tell the class its work is to send the blood to every part of the body, and that the blood carries with it the food and air which each part needs. Call attention to the fact that no one could live without food, or air, or if his heart should stop beating. Ask what a trunk is used for in traveling, and explain that a second meaning of the word trunk is a box or chest in which something is kept. Have the class name again the parts of the body which are found in the body trunk and explain why each is precious and needs to be kept in a safe place.

Ask each pupil to name and locate from the chart or his own body some part of the trunk, until the shoulders, chest, abdomen, breast, back, sides, waist and hips have been found.

Show by an illustrative drawing how the diaphragm forms the floor of the chest and the roof of the abdomen. How is this like a two-story house? Which of these stories has a bony covering before and behind? Which only behind?

Have the class find the hard parts of the trunk; the soft parts; then think of reasons for each. Have them bend the body and find whether the back-bone is made of one bone or many. How do these twenty-four small bones help us bend the body in any direction?

Call attention to the way in which the human trunk differs from that of animals. Show how the trunk is held upright in man, and what advantage this gives him. Help the pupils to notice what animals can bend the trunk more easily than man; what ones less easily. How nearly erect is the trunk held in the different animals the class have seen?

(4)

THE UPPER LIMBS.

Make a blackboard list of ways in which the class have used their hands and arms during the day. Call for other ways in which these parts of the body may be used. Show the importance of these parts also, by asking the children what they could not do if they were without hands and arms.

Explain how the shape of the upper limbs fits them for their work. Have the class find which parts of the arm can move most freely. Ask them to imagine the hand in one piece, and then tell how the separate fingers help to make it more useful.

Ask what parts of the dog correspond to our upper limbs. What can he do with his fore legs and paws which we can not with our arms and hands? What can we do which he can not? What things can he do better than we? What can we do better? Make a similar comparison between the upper limbs of other animals and those of man. Why can we train our hands and arms to be more skilful and valuable than the corresponding limbs of dumb animals?

Have the class find and name the parts of the upper limbs—shoulder, arm, elbow, forearm, wrist, palm, back, fingers, knuckles, ball, tips, nails. Why are so many parts needed? Why are there more parts in the hand and forearm than in the upper arm? Call attention to the way the thumb is placed in the hand, and the great advantage this gives man over the lower animals.

Compare the finger-nails with the claws of animals and show how the difference in the way the hand is tipped affects what it can do. Ask what kinds of work require powerful arms; what kinds call for skilful hands and a delicate sense of touch.

(5)

THE LOWER LIMBS.

Hold up the picture of a locomotive or some very large machine, and beside it the picture of an ant or tiny insect. What are some of the things which the ant can do which the engine can not? Help the class think how animal life differs from vegetable in its power to move from place to place, and how it differs from objects which are without life.

What parts of the body do we use in moving about? How much can we do with our lower limbs? Make a blackboard list of such motions and let the class illustrate the whole or a part of them.

Compare man's use of legs and feet with that of different animals. Find what animals can run most swiftly, leap farthest in proportion to size, have the strongest limbs. In what ways are their legs superior to man's? How are they inferior?

Name the parts of the lower limbs, pointing out the location of each — hip, thigh, knee, leg, shin, calf, ankle, foot, ball, toes, joints, nails. Find how these parts correspond to the upper limbs; how they are different. Show how the work each must do determines its shape, size and strength.

Have the class find the joints in the upper limbs and compare with those of the lower limbs. Which can move more easily? Which are stronger? Give a reason in each case.

Compare the legs of different animals as to number. How many has the fly? the spider? the centipede? the snail? Ask all to notice insects and the different forms of animal life they see during the day and find how the number and size of their legs are suited to their mode of life. Explain how a fly can walk upside down; why a hen's toes are separate and those of a duck joined together; why a bear can climb a tree, while a dog can not; why a rabbit can jump farther than a cat.

(6)

THE PARTS AS A WHOLE.

Show the class a piece of coal or stone. Break it and let them find that all the parts are alike, that each is just as truly coal as the whole lump. How is this different from the way our bodies are made up?

Show the picture of a boy or girl, and have the parts of the body named and written on the board — head, neck, trunk, limbs. Are these parts alike or different? How are they unlike? Of how much use would any one of them be apart from the whole? Which parts are necessary to life? Which would we want to spare?

Help the class to think of animals whose bodies have fewer parts than man. What part is lacking in a fish? What parts in a snake? in an oyster? How is man superior to these animals?

Bring out the ways in which different animals

are more expert than man; how the horse excels him, the elephant, the robin, the grasshopper, the squirrel. Ask the class in each instance to show why man fails to do some things as well as these animals can do them.

Have the children make a list of things done in your own town which only man could perform. Call attention to the buildings he has erected, the railroads built, rivers bridged, machinery made, and ask whether the work of man or of the lower animals is greater and more valuable to the world.

Name different kinds of work familiar to the class and have them tell what parts of the body are needed to do each. What kinds of work require most skill? most strength? What kinds require the use of only a few parts of the body? What kinds call every part of the body into play?

Compare man's body as a whole with that of the most intelligent animals. Show how man's power to stand upright gives him pre-eminence; how this advantage is increased by the shape and arrangement of his hands and feet; and how, above all, his mind fits him to rule.

(7)

TRAINING OF THE BODY.

Ask the children to find how a fine colt is trained for racing. Have them bring into class all the facts they can gather in regard

to the way such an animal is fed, exercised, guarded from exposure, and trained. Why is nothing left to chance?

Show that the same care is given to the training of a boy for football or a rowing match. He is not allowed to do anything which might lessen his chances of success.

Write on the board names of well known musicians, artists, mechanics, or any one who has done really skilful work in some line. Ask what parts of their bodies needed to be well trained in each case. How did it happen that these people surpassed others in their profes-



"A lovely being, scarcely formed or moulded,
A rose with all its sweetest leaves yet folded."

sion? Perhaps they had great talent to begin with, but this would have done them little good if they had not tried continually to do still better work.

Find what the pupils in your class are planning to do when they are through school. How many are training to be fine men and women? This is worth working for far more than eminence in football.

Ask why people never begin to train an old horse for racing and why elderly people do not enter athletic contests. Bring out the fact that training to be effective must be given when the muscles are limber, and that every one who wishes a really well trained, flexible body can have it only by beginning to take care of it while he is young.

(8)

ESSENTIALS IN DEVELOPMENT.

Help the pupils to get a clear idea of what is meant by a well trained body. Refer to some man and woman of fine physique whom they know. Question to bring out the reasons why such people are to be admired. How do they stand and sit? How does their walk differ from an awkward person's? Are they able to do much or little. Are they sickly or strong and well?

The next thing to think about is how to get a well developed body. Natural advantages are a great help but they can not make up for lack of training. General Grant was an undersized boy but he looked every inch a soldier because every bone and muscle was well trained.

Write the word food on the board as the first thing needed if one means to have a well built body. Ask why we must eat; what food does for the body; why it should be well selected, well cooked; why one should eat neither too much nor too little, and at regular hours rather than at any time. Have the children find why a good farmer always follows certain rules in feeding his stock. Why is the same care even more necessary when the best development of a child is at stake?

Discuss similarly in class the best way to dress and exercise to give one a fine form. Show the need of an abundant supply of sunshine and pure air, of sleep, work and play to help bring about this result.

Call attention to the correct shape of the body. Show how tight clothing may change this shape and prevent growth, and how it weakens the muscles. Emphasize the need of warm clothing in winter and in variable climates.

Ask the class if there is any part of their bodies they would be willing to have remain small and weak, and help them devise modes of exercise which will develop all parts alike. Emphasize that food, air, fuel, and even every form of life is finally dependent upon the sun and should be treated as such. Show that we

need to be in the sun and live in sunny rooms quite as much as plants do, in order to grow properly.

Bring out the fact that pure air is as necessary to the body as food and that we can not live without it. Give frequent breathing exercises to show the children how to breathe properly, and talk over with them the best way of keeping the home supplied with pure air.

Show the impossibility of having a well developed body unless enough time is taken for sleep in order to make good the daily loss of strength through work, study, play and exercise of various kinds.

Notice the different games and tasks which your pupils engage in during the day, and help them to think how each develops the body. Find whether any parts of the body are thus being built up at the expense of others, and suggest plays and tasks which will right the mistake.

(9)

HINDRANCES TO DEVELOPMENT.

Find what pupils have pets at home. Would they ill treat them in any way or allow any one else to hurt them? Show how much more valuable they are than their pets, and the far greater loss it would be to parents and friends if their health were to suffer.

Help them to understand why they can not expect to grow well if they live on poor food or that which is improperly cooked; why lounging and stooping over their work will spoil the form; why living in close stuffy rooms will produce frequent colds; why carelessness about bathing will produce poor complexions, and rough, chapped hands and faces; why late hours will keep them from having clear brains and strong bodies; why tea and coffee will make them cross and nervous.

From the quotations given below make a list of the ways in which tobacco and alcohol hurt the growth and produce weaklings instead of men and women. Notice especially the effects of these poisons upon the parts of the body they are most interested to have fine and strong — upon the muscles, the heart and brain, the senses, and upon height, growth and strength.

Show the class a lovely bit of statuary, a watch, or a fine piece of china. Why are we careful to keep such precious things from being marred or injured? Could they not be put together again if they should be broken?

Which is better, a strong, healthy constitution, or one broken by wrong-doing and disease, even if the latter can be patched up after a fashion?

Show that every one who really wants a fine body, a clear brain and steady nerves will be willing to live in such a way as to make sure of these priceless possessions.

AUTHORITATIVE QUOTATIONS.

HURTFUL DRINKS.

Neither tea nor coffee is a fit drink for children. It is more than probable that the common use of these narcotics during childhood and youth is one of the factors which in later years produce the army of neurasthenics. It is stated by travellers in Brazil that the free use of coffee by the inhabitants is bringing about an evident deterioration of the people. This is conspicuously shown in their complexions and their nervous systems. By irritating the nerves that govern the heart's action, coffee quickens the circulation, and in many cases induces cardiac palpitation. Coffee acts upon the nervous constitution of some persons the same way as alcohol.—CHAS. H. SHEPARD, M.D.

ETHYL ALCOHOL AND NICOTINE VIRULENT POISONS.

Ethyl alcohol, the only active ingredient in fermented and distilled drinks, and nicotine, the active agent in tobacco, in their pure state are described by all chemists, pharmacists, and toxicologists as most virulent poisons, speedily destructive to both animal and vegetable life, even in moderate doses.—[Journal of Inebriety.

ALCOHOL RETARDS GROWTH.

Alcohol used continuously retards growth, diminishes vitality and prevents development. Drinking parents have deficient vitality and are unable to transmit to the next generation full normal vigor. The last and highest formed element of brain power—consciousness—is the first to suffer from alcohol. Hence drinking parents can not have children with full normal consciousness. This faculty will be wanting or feebly developed. This is the rule to which the exceptions are rare.—T. D. CROTHERS, M.D.

DEGENERATING INFLUENCE OF ALCOHOL.

That the alcohol in half a pint of beer or a single glass of whiskey lessens the rapidity of nerve transmission, mental perception, acuteness of the special senses, and muscular strength, has been abundantly demonstrated by the application of instruments of precision.

That the same amount of alcohol deludes man with the impression that he is stronger and more active when he is actually doing less, is a fact familiar to all who have given attention to the subject. The only rational conclusion, then, is that the degenerating influence of alcohol upon man, physical and mental, commences with the beginning of its use, and increases in proportion to the quantity used and the length of time it is continued.—[Journal of Inebriety.

EFFECT OF ALCOHOL ON THE MUSCLES.

In case of the non-fatigued muscle Professor Frye found in every case that the effect of alcohol was injurious. Even beer and very dilute solutions of alcohol were found to diminish the height to which a lifted weight could be raised. In the majority of persons the amount of work which the muscle was able to do in a given time was decreased. A fact noted as remarkable was that notwithstanding the actual diminution in the amount of work performed, the person experimented upon was under the impression that the weight lifted was lighter, and that the work was more easily accomplished.

—J. H. KELLOGG, M.D.

FATTY DEGENERATION

CAUSED BY ALCOHOL.

Fatty degeneration is in many cases the direct result of the long-continued use of large doses of alcohol, and when once the process of degeneration has been set up, even small doses appear to exert a further injurious effect upon the altered muscle.—G. SIMS WOODHEAD, M.D.

ALCOHOL INJURES MIND AND BODY.

It has been proved over and over again that alcohol has a baneful influence on both mental and bodily health, and the nation is made up of individuals. If it increases disease and crime among those who use it, it must correspondingly increase it in the nation.

—GEO. W. WEBSTER, M.D.

CIGARETTES DWARF MENTALLY AND PHYSICALLY.

Cigarettes depraves the morals of boys, weakens their minds and destroys their bodies.—C. H. CHAPMAN, President University of Oregon.



"In the very May-morn of his youth,
Ripe for exploits and mighty enterprises."

I do not believe there is an agency more destructive of soul, mind, and body, or more subversive of good morals, than the cigarette. The fight against the cigarette is a fight for civilization.—Rev. F. W. GUNSAULUS, President Armour Institute, Chicago.

Physiology and observation both lead to the same conclusion, that cigarettes are harmful to the youth; that they not only dwarf the boy mentally and physically but make a criminal of him. The sale of cigarettes to a man of matured age might be excused upon the ground that he is capable of judging for himself, and if he desires to die by slow poison, let him do so; their sale to young men should be severely condemned and prohibited, and to a boy under sixteen made criminal, as is the sale of any other poison.—Hon. GEO. TORRANCE, Gen. Supt. Illinois State Reformatory.

TOBACCO LESSENS MUSCULAR POWER.

Tobacco affects the nerves controlling various muscles, causing a gradual loss of muscular power and resulting in paralysis.

The pulse of every habitual user of tobacco will show irregularities in the heart's action. Tobacco-users frequently suffer with palpitation, angina pectoris, and other symptoms of derangement of this organ. There is a disease of the heart resulting from tobacco poisoning known as "narcotism of the heart." Statistics show that about one-fourth of those who smoke have this condition.—W. H. RILEY, M.D.

TOBACCO INJURES THE HEALTH.

The effects of alcohol are organic and fatal, and, while tobacco is more subtle and indirect in its processes and slower in manifesting its effects than alcohol or other poisons, it produces results permanently detrimental to health and vigor of the individual, and also clearly shows its deteriorating power by transmission to the third and fourth generation.

CHARLES H. SHEPARD, M.D.

THE MAN WITH A HOE.

HE is not Professor Markham's man. He is another man, the man who "hoes his own row." He does not "lean upon his hoe;" he uses it. Nor is "the emptiness of ages in his face;" but grit, grip, enterprise, push, ambition, eagerness. He is not "stolid and stunned, a brother to the ox," but the liveliest piece of flesh and blood in the world. He intends to do something and be something and he goes at it with might and main. America is full of him and always has been. He has pushed his way from the bottom to the top along every way and walk of life. He has chopped and grubbed and hoed in the wilderness; he has followed the plow and read while

the horses rested, and studied at night. He has gone behind the counter at a dollar and fifty cents a week and made himself a merchant prince. He has worked his way through college, doing chores, pushing wheelbarrows, milking cows, chopping wood, making fires, taking care of horses, digging gardens, anything, everything to get on. A judge who has been on the bench of the supreme court of Illinois twenty-seven years, dug post holes for six cents an hour when in college. A United States senator used to drive an ox team.

But it is useless to mention instances, for four out of five of the men of success the country over began with nothing or next to it, and have worked their way up. They have made themselves, and in making themselves have made the country. Without them the America of to-day would not be. With them it has eclipsed all dreams.

As an object lesson this man who hoes his own row is worth ten thousand times as much, as the man who is "dead to rapture and despair, a thing that grieves not and never hopes." The "dead" man is not our kind; he does not belong to America's free air, or to the stir and impulse of her mighty life. Of all things the young man must not think that he is in the grip of the invincible, that "on his back is the burden of the world," and that he can only be a pack-horse to the proud and the mighty. He must hold fast to the fact that the hardest thing to put down, keep down, and crush, is a man, a man with the stuff in him, a will to do and be.

If the young men of the country believe that the system of things is closing in upon them, they must not whine or creep down into their boots, but fight the system. "Quit you like men," is a cry that has been ringing across the world since the days of Moses. That resolute Jew wrested himself and his people out of the hands of the Pharaohs. If the spirit of the Pharaohs is creeping in upon the land, and the mighty man is becoming an oppressor, let the spirit of Moses come upon the young men. They are voters, the rising power, the makers and owners of the future. There is not an oppression which they can not end, nor an oppressor whom they can not crush at the polls. The hideous greed, the perversion of power, the encroachments of the plutocracy and all the rising dangers of the hour, are things that they can sweep from public place, and keep America in the future what it was in the past, the freest and best place in the world for the man with a hoe.

What we want, what the times demand, is not a man leaning upon his hoe and looking hopelessly upon the ground, but a young man with the old fire in his eye, the old spirit in his heart, and the mighty resolve that conquers.

—[The Advance.

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INDIAN SUMMER.

Upon the face of one whose hour was nigh,
I saw the light of youth return once more;
So when God called the withered year to die,
Before her spirit passed, June's smile she wore.
CHARLES HANSON TOWNE.

THE PENALTY OF INDULGING IN ALCOHOL.

ALCOHOL is neither a food nor a tonic; it is an excitant and depressant. Like all poisons it first irritates and then paralyzes. It wastes vitality by first abnormally rousing and then abnormally depressing sensation and emotion.

Alcohol abuses and weakens the nervous system, thus causing a predisposition to all diseases and aggravating them. Alcohol is the parent of the neuroses-hysteria, epilepsy, chorea, neuralgia, neuritis, cramps, delusions, hallucinations, dementia, and all those nervous disorders which have no distinctive pathology, and rest upon a peculiar irritable state of the nervous system. It likewise prepares the soil for tuberculosis, diabetes, Bright's disease, cancer, and other diseases dependent upon defective innervation and impaired nutrition.

Alcohol irritates the mucous membranes and structure of organs, leading to chronic inflammations with fibrous changes, contraction and hardening, or tissue break-down with hemorrhages, pus-formation and blood poisoning. In all cases the liver, lungs or kidneys become organically diseased sooner or later, and untimely death is the frequent result.

The man who dallies with alcohol, permitting himself to take an occasional drink, is almost certain to form a pernicious habit which he is powerless to break, and which slowly and insidiously robs him of his reserve vitality. He may not see or feel the draught on his forces, because no emergency occurs to test his strength, but the drain is going on all the same. This gradual leakage of vitality, if wisely invested in right habits and good living, would add twenty years to his life-span, and enable him to hand down a constitution untainted by vice or physical infirmity.—[Medical Brief.

PERIODIC WAVES OF INTEREST.

OBSERVERS tell us that for the last century in our country interest in the temperance cause has been periodistic. They tell us too that these periods of interest, of realization of the dangers of alcoholism and sympathy with the sufferings of its victims have come in waves, with intervening times of profound indifference when men scoff, ridicule, and oppose both the reform and the reformer, and the mass of the people take no interest and will not listen to any discussion of the subject.

I read the other day with keenest appreciation this passage from Victor Hugo:

"It is one of the poignant anxieties of the thinker to see the shadow on the human soul and to feel in the darkness sleeping progress without being able to awaken it. But the man who despairs is wrong; progress infallibly re-awakens, and we might say it moves even when sleeping for it has grown. When we see it upright again we find that it is taller."

"We are now passing through one of the decadence periods, the time of the scoff in the temperance cause," says that observing statistician, Dr. Daniel Dorchester. Admitted, but the fact that opposition has arisen to this temperance education movement is a sure sign that the cause is growing while it seems to sleep, and that when it rises it will be taller with the colossal vigor of youth and numbers and able to accomplish that which you and I have longed to do, but failed because we were in the pitiful minority that can only protest and work for the larger day.

As I recall the record of history I see that when the hour strikes for the spread of a truth against evil no one can stop it. The futile rage of opposers sinks into insignificance before the calm, irresistible omnipotence of truth as it moves on through human history with something of the all-conquering power of the Son of Man.

The great stone at the door of the sepulchre, the seal, the Roman guard, the mighty power of Cæsar could not suppress the truth that the crucified Nazarene was God, the Saviour of men. And since that hour truth that saves in spite of opposition has had the right of way. Alcohol has poisoned life at its fountain. The story of its ruin everywhere is enough to move a heart of stone. To teach truth that warns the young against commencing its use is God's plan. His methods never fail.

Therefore, with a song of victory for what has been accomplished, and undaunted, unfaltering faith for the future we press on, standing steadily for the truth, the whole truth, and nothing but the truth for the children of to-day who will thereby be fitted to deal intelligently with the alcohol question which waits their solution.



THE MUSCLES.

IN these days much is said in disparagement of the class of immigrants which throngs our shores. They are driving out better men and lowering the standards of decent living, is the charge against them.

The hopeful side to the picture is the willingness of these newcomers to work. Perhaps it is no pleasanter to them than to other men to sweat and stifle in crowded tenements, but they want, what they have never had before, a chance, and they are willing to pay the price.

The sternest competition has its advantages; it stimulates to effort, it brings out the best in man. If the better born and better taught native citizen is unwilling to work shoulder to shoulder with the foreigner, sharing his squalid degradation, he may use brain as well as muscle and create new fields for himself. The industrial battle is more and more to the strong, and success in the long run will crown the fittest and best deserving.

Everything combines to foster the pride of the American youth and to lead him to consider himself as well as his country invincible. He has yet to learn that a man's foes are they of his own household, and that in spite of birth and training and position he will fail to hold his own, unless he so orders life and conduct as "to expand to his full growth; to resist all impediments; cast off all noxious adhesions, and show himself at length in his own shape and stature, be these what they may."

STRUCTURE OF MUSCLE.

Some knowledge of the structure of the body is necessary to insure its best development. Help the class to find by experiment and study what muscle is.

Boil lean beef and pick the fibres apart. Why is it not solid? Show how blood-vessels and nerves are connected with muscle. Notice the difference between a muscle and a tendon.

Draw smooth and non-striate muscle under the microscope. How do they differ in appearance? What different work has each in the body? Where is each found? Explain the

structure of the heart muscle. Find the important muscles of the body and decide of what kind of muscle each is made.

Notice how the different muscles are attached to the bones. Why are they not in an entirely separate layer by themselves? How do the ends of a muscle differ in structure from the central portion? What is the explanation of this difference?

ADAPTATION TO WORK.

Study the outer layer of muscles from charts or the illustration in a good physiology until all can draw from memory the human form as it would look if the skin were removed.

Notice the size and arrangement of each group of muscles. Ask the pupils to point out muscles which are long and slender; others which are broad and thin; those which form a ring; those which are fan-shaped; rounded; those with two heads or points of attachment; those with three.

Have all find the longest muscles in the body, the shortest. How does the size and shape of the arm muscles vary from shoulder to wrist? Why are not all muscles under the control of the will?

Study the variety of movements which the body must execute. The legs and arms are capable of hundreds of different motions; the eyes, lips, tongue and head have each a distinct set of movements; the heart never stops beating, and the muscles in the alimentary canal and the walls of the blood-vessels must not relax their efforts. How are all these motions possible?

Show how the various shapes of the muscles exactly adapt them for the many kinds of work they must do. Explain the lever system of the body and why it is needed. Find which muscles are moved through its mechanism, and how the motion takes place.

TRAINING OF MUSCLE.

The best bodily training comes from sports if wisely directed, and the intellectual and moral value of such is almost as great as the physical.

Lead your pupils to see what proper training of the muscles is, and how much is involved. They all know that severe exercise, mental or physical, should not be taken directly after eating. Do they know why?

Show how exercise enlarges and strengthens the muscles, and how it increases the flow of blood to these organs. What difference does this make? How are the muscles starved by a poor diet, or by an insufficient supply of oxygen? Trace the connection between the extra blood supply brought to the muscles by exercise and the work of the heart and lungs. What is the danger to these organs in taking excessive exercise?

Explain how exercise increases the number of waste particles in the muscles, and how this is one cause of fatigue. How does rest remove this fatigue? How much rest is necessary?

ABUSE OF THE MUSCLES.

Show that a poorly developed body is a deformity and to be guarded against as such; that excessively strong leg and arm muscles and a weak heart or lungs do not belong together, nor do well developed lungs and bust correspond with contracted waists.

Study in detail the effects of narcotics upon muscles. Find what a poison is; how it differs in nature and effects from a food; which is necessary to muscle development; which is harmful?

Show, by reference to expert testimony from all sources, how the poisons in alcoholic drinks and tobacco affect growth, strength, the nervous energy which one must use in moving his mus-

reduces him to the brute level where he does not care, because he no longer realizes his condition.—[Medical Brief.

ALCOHOL PREVENTS GROWTH AND DEVELOPMENT.

One experimenter states that alcohol, either in large or small doses, retards, prevents and is destructive to normal growth and development, and lowers working power.—V. D. MILLER, M.D.

ALCOHOL LESSENS MUSCULAR STRENGTH.

Alcohol, after a most careful physiological investigation, has been declared to be not a stimulant but an anæsthetic, a depressing and paralyzing agent under all circumstances. It lowers the temperature and the pulse-rate, diminishes the senses, lessens the muscular strength, impairs the memory, slows all the brain functions, and brings them below their normal acuteness. It diminishes the power of reason and judgment.—I. D. MISHOFF, M.D.



"The manly part is to do with might and main what you can do."
"The field is not far off where we must give the world a proof of deeds, not words."

cles, the heart which supplies the muscles with food and oxygen, one's capacity for any kind of work. Above all, impress upon your pupils the great mistake of thinking that a cigarette now and then, or an occasional drink of beer does no harm to the muscular system or any other part of the body. Professor James, the psychologist expert, says: "Every small stroke of virtue or vice leaves its ever-so-little scar," and the slightest indulgence in whatever degrades by so much fetters the soul and keeps it from reaching its true stature.

AUTHORITATIVE QUOTATIONS.

ALCOHOL ALWAYS CRIPPLES.

Alcohol in any shape, and in any dose, cripples a man physically, mentally and morally. It wastes his life forces with prodigal hand, lessens his chance of a long life, depraves and degrades him. Alcohol enslaves a man, and

NICOTINE POISONS TISSUES OF THE BODY.

There is no such thing as the temperate or moderate use of tobacco. Tobacco is a poison, and harmful in all doses. The effects may not be apparent to-day or to-morrow, but the mischief is being done and will certainly appear sooner or later. It is safe to say that tobacco never prolonged a single human life a single day. As a death-dealing agent it is highly potent, but it can contribute nothing to life or health.—F. S. KELLOGG, M.D.

Tobacco makes its largest inroads on those who have not reached maturity. At every stage of life tobacco makes less instead of more of a man, while it is especially active in making the old man slovenly and loathsome.—A. P. REED, M.D.

TOBACCO SHORTENS LIFE.

The average life of the heavy smoker is appreciably shortened.—J. M. BARNETT, M.D.

NINETEENTH CENTURY NOTES.

III. MAN COMING TO HIS OWN.

THE year 1830 marks a definite turning-point in the story of the century. The severest of the reaction following the wars of Napoleon had passed, although a conservative spirit was still in the lead. But new forces were in motion; the great age of mechanical invention had fully opened. Machines had begun to do the work formerly done by hands, and steam to move the machines and swiftly to transport the product over land and seas. Home production was giving away to the factory system, and labor, displaced by the rapid change in methods of production, conscious of its misery and eager for relief, justly claimed that some of the promised blessings of liberty should be hers. Hence the influence of the new economic conditions, manifesting itself differently in different countries, made the events of the ten years following 1830 center about the needs and rights of the individual as the contribution of this decade to the progress of the century.

The success of Greece in winning independence and of France in overturning the monarchy of Charles X. gave other European states fresh courage to renew their efforts for wider liberties and independence. Belgium, as we have already seen, gained independence from Holland, while several of the German states secured new constitutional privileges, to the distress of Metternich who thought he saw in these commotions "the world in ruins." This being his view of the situation, the efforts of a few of the Italian states to rid themselves of the rule of Austria were promptly stifled, and the Italian lack of a common definite purpose and course of action led to apparently hopeless failure. Yet the darkness was lightened by the enthusiasm and ideals of "Young Italy," whose leaders saw her only hope to be in the cultivation of a spirit of national unity.

Poland, chafing under the Russian yoke imposed by the Congress of Vienna, tried to shake it off, but found herself, in spite of heroic resistance and defence, no match in numbers or organization for the Russian Czar Nicholas, and so lost many of the privileges she had before enjoyed.

Like Italy, Germany was seeking unity. But the unbounded influence of Metternich over King Frederick William of Prussia and other German princes retarded constitutional progress. Every form of public demonstration was repressed. Finding themselves unable to secure at once any radical political changes, the people turned their attention to the new opportunities afforded by the progress of industry and commerce growing out of the changed conditions of production and transportation. Each state was practically independent in the man-

agement of its internal affairs, and the widely differing commercial regulations proved a great hindrance to increasing trade. Within the borders of Prussia alone, it is said, there were sixty-seven different commercial and tariff systems. Therefore it became necessary, simply as a matter of financial interest, that trade regulations should be simplified. Gradually following the lead of Prussia, by 1836, nearly all the states were united in a commercial union by which internal tariffs and custom-houses were abolished, and a common tariff list was agreed upon.

Naturally the states became interested also in improving means of communication, such as roads, canals, railways, steamship lines, and postal arrangements, all of which led to a community of interest, lessened local prejudice and created a sense of responsibility for the common public good, thus paving the way for genuine German nationality.

While Italy was struggling for unity and against the autocratic rule of princes, and Germany was achieving it, though in a round-about way, France had entered upon a new phase of national life. National and political unity were already hers; she had settled the question of the right of the people to a share in the government. She had now to make practical her theories, and to meet questions relating to the social and economic rights of the individual.

The results of the revolution of 1789, while benefiting the nation as a whole, had been especially to the advantage of the middle classes, and only indirectly to that of what had been known in the old days as the "Fourth Estate." The "July Monarchy," as that of Louis Philippe was called from the month in which it came into power, came into existence at the summons of a portion of the middle class, and the people felt it one of their special grievances that the question of his selection was never allowed to come to a popular vote. Industry and commerce were largely in the hands of this same middle class. To the laborer, working under miserable conditions, with the rate of taxation still high, the tyrannous rule of the monarch had but given way to a no less oppressive rule of the capitalists. Hence, as the people felt the spirit of the "July Monarchy" and of the middle classes to be identical, their hatred of the latter naturally extended to the former and became one of the influences that led to its fall. The misery of the working classes soon broke out, especially in the vicinity of Lyons. The losses to the silk trade through home and foreign competition fell heavily on the workmen who, it is said, were receiving but about eighteen cents for a day's labor of eighteen hours. Small wonder that they rebelled with the cry, "We must live while working or die fighting."

The government in its determination to preserve peace at home and abroad proved unequal to the situation, for the harsh measures employed to restore order, unaccompanied by any measures for permanent relief, while taxes were still unchanged and no effort made to reduce the cost of living of the laborer, only increased the bitterness. The government, unable to solve the problem of the proper organization of society thus presented to it, contented itself with trying to keep the surface smooth. The wider constitutional privileges promised at the accession of Louis Philippe were not forthcoming and every protest was answered by repression until, at last, convinced they must bide their time, the people tried to think out for themselves the solution of the problem, and only waited until a favorable opportunity should be given for trying the theories so evolved.

Meantime, across the channel, England was confronted with questions not unlike those of France, but she was meeting them more openly and intelligently. There the growth of manufacturing interests had brought into great prominence the inequality of popular representation in Parliament. It is said that out of a population of 3,000,000 male adults in England, 15,000 chose a majority of the members in the House of Commons. There were numerous so-called "pocket" or "rotten boroughs" which represented only the owners of the estates in which they were situated. One duke alone was represented by eleven members who sat for places forming a part of his estates. Since the establishment of the boroughs new towns and cities had grown up, devoted chiefly to manufacturing interests which practically were not represented in Parliament at all. The movement begun before 1830 for parliamentary reform was hastened by the overthrow of Charles X. in France in 1830, for in both countries the impulses stirring were those of the middle and mercantile classes. The famous Reform Bill of 1832 at last swept away old election abuses and established a basis of fair representation. With

it came an extension of the suffrage and reforms in city governments.

Nor did reform stop here. The spirit of democracy was abroad which, says Goldwin Smith, "whatever its political weaknesses is humane. It sets equal value on all human life and recognizes in every human form the dignity of man."

With an increased power in government came other reforms touching directly the lives and conditions of the people. The Poor-Laws were swept away, an institution which by its system of relief of the poor had directly encouraged pauperism, and by confining those out of work to their own parishes had prevented labor from

seeking the best market, and had also degraded it by leading farmers to employ paupers supported by the parishes instead of paying wages. The list of capital crimes was reduced. Imprisonment for debt, which Mr. Bancroft tells us had kept every year at least 4,000 men in prison, was abolished. The prisons themselves were subjected to regular inspection to prevent abuses. The man accused of felony was given the right to have counsel heard. The labor of women and children in mines and factories was restricted, trades-unions legalized, and factory inspectors appointed. Beginnings were made for a national education, while a lightening of taxation on the press and the introduction of the penny post speedily increased the circulation of the printed page, and consequently public intelligence. "The Reform acts of 1832," says Mr. Stead, "cast the die in favor of democracy."

Nothing could have been more striking than the contrast between the ways in which France and England met similar problems. The hesitancy and inability of the former to cope with them settled nothing, led to repression and another revolution, while the latter, dealing with them with

"Some sense of duty, something of a faith, Some reverence for the laws ourselves have made, Some patient force to change them when we will,"



"When the girl queen stepped upon the throne of her fathers she found the nation awake as never before to the needs of mankind."

was entering upon a period of serious activity and hope. To England "everything was new, everything was true, and everything was of the highest importance."

It is true that all wrongs in England were not settled in that one decade, but a beginning had been made, and when, in 1837, the girl queen stepped upon the throne of her fathers she found the nation awake as never before to the needs of mankind, strong in battles of the past won for liberty and justice, ready to enter upon the future of a government which as never before was a government of the people.

One of the greatest results for humanity springing from the Reform Acts was the abolition of slavery in British domains in 1833. Not so fast had this reform progressed in the New World where, through the thirties, slavery became more and more a burning question while the dark cleavage line between North and South was already visible. Great as was the moral wrong, slavery at this time was chiefly an economical, industrial and political question. Given new life by the industrial and commercial changes which made possible a greater production from southern fields, it had become a sort of Moloch requiring offerings from society and nation. Protective tariffs could not be levied because the weight bore too heavily on those employing slave labor with all the expense which the latter entailed. The freeman could find no employment in competition with slave labor, while the slavery system was constantly reaching out for new fields to till, new territories to settle, new powers in state and nation with which to strengthen its hold.

The fourth decade of the century was one of tendencies rather than a period of definite settlement of questions, tendencies which can only be explained and their trend and importance determined in the light of succeeding years. It was a time of striving after methods by which the individual should come into his rightful heritage of political, social and industrial freedom, and each nation had to work out the problem in its own peculiar way. It was a time of conflict, uncertainty, disappointment, yet on the whole of definite progress, so that the poet with his clear-eyed vision could sing:

"Ourselves are full
Of social wrong; and may be wildest dreams
Are but the needful preludes of the truth. . . .
This fine old world of ours is but a child
Yet in the go-cart. Patience! Give it time
To learn its limbs; there is a hand that guides."

"The average life of an engine only 30 years?" said an astonished passenger. "Why such a tough-looking thing ought to live longer than that."

"Well," said the engineer, "perhaps it would if it didn't smoke so much."

SPECIAL NOTICE.

THE great fire at Bloomington, Illinois, which destroyed five blocks of buildings in the business heart of the city, burned the records of the Public-School Publishing Company. The vault in which they were kept was thrown down by the falling walls.

It is only through the assistance of friends that the publishers can recover the names of the subscribers of "School and Home Education," formerly "Public-School Journal." The September number will be mailed to all whose names can be obtained. Will not every one who knows the name and address of a subscriber to "School and Home Education" write it upon a postal card and send to the publishers?

A haze on the far horizon,
The infinite, tender sky,
The ripe, rich tint of the cornfields,
And the wild geese sailing high;
And all over upland and lowland,
The charm of the goldenrod—
Some of us call it Autumn,
And others call it God.

—WILLIAM HERBERT CARRUTH.

A little boy at Islington, whose father is a Frenchman, but who, himself, was born in England, has recently been taking his first lessons in English history. The other night he looked up from his book, musingly, and said to his father:

"Papa, we licked you awfully at the battle of Waterloo, didn't we?"

THE AUTUMN JEWEL.

Those awful powers on man that wait,
On man, the beggar or the king,
To hovel bare or hall of state
A magic ring that masters fate
With each succeeding birthday bring.

Therein are set four jewels rare:
Pearl winter, summer's ruby blaze,
Spring's emerald, and, than all more fair,
Fall's pensive opal, doomed to bear
A heart of fire bedreamed with haze.

—LOWELL.

Some time ago little Walter had occasion to differ with his aunt upon some trifling matter. "I tell you," said auntie, playfully, "I know a few things." "And I know as few things as anybody, I guess," said Master Walter, indignantly.

BOOKS RECEIVED.

F. BERGER'S New Method for Learning French, edition of 1900. Sample copy, mailed postpaid, for 42 cents (half price), to be remitted to French Academy, 853 Broadway, New York.

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ADVANCED—Digestion. Assimilation and Secretion. Muscular System.

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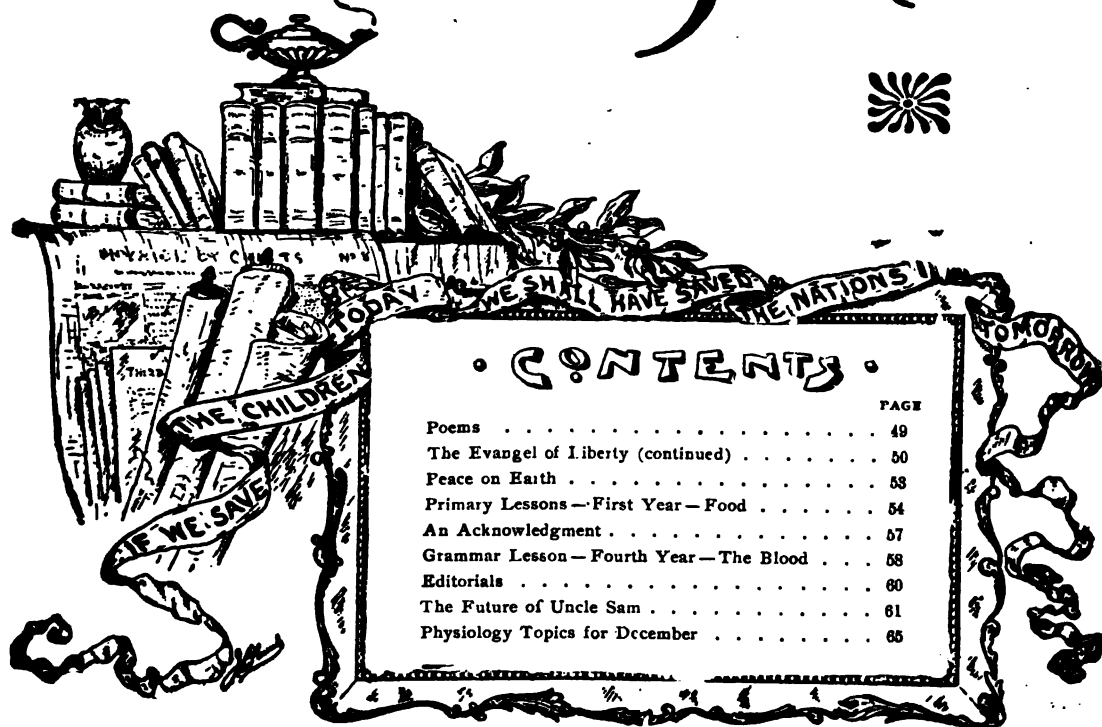
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School Physiology Journal

Vol. X.

BOSTON, DECEMBER, 1900.

No. 4.

O LITTLE TOWN OF BETHLEHEM

O little town of Bethlehem
How still we see thee lie ;
Above thy deep and dreamless sleep
The silent stars go by ;

Yet in thy dark streets shineth •
The everlasting Light ;
The hopes and fears of all the years
Are met in thee to-night.

For Christ is born of Mary,
And gathered all above,
While mortals sleep the angels keep
Their watch of wondering love.

O Morning stars to-
gether
Proclaim the holy
birth !
And praises sing to
God the King,
And peace to men
on earth.

O holy Child of
Bethlehem !
Descend to us, we
pray ;
Cast out our sin
and enter in,
Be born in us to-
day.

We hear the Christ-
mas angels,
The great glad tid-
ings tell—
O come to us, abide
with us,
Our Lord Imman-
uel !
PHILLIPS BROOKS.

CHRISTMAS BELLS .

I heard the bells of Christmas Day
Their old familiar carols play ;
And mild and sweet
Their words repeat
Of peace on earth, good will to men !
And thought how, as the day had come,
The belfries of all Christendom
Had rolled along
The unbroken song
Of peace on earth, good will to men !
LONGFELLOW.

GREETING

A happy Christmas to you !
For the Light of Life is born,
And his coming is the sunshine
Of the dark and wintry morn.
The grandest Orient glow must pale,
The loveliest western gleam must fail,
But his great light,
So full, so bright,
Ariseth for thy heart to-day,
His shadow-conquering beams shall never pass
away.

A happy Christmas to you !
For the Prince of Peace is come,
And his reign is full
of blessings,
Their very crown
and sum.
No earthly calm can
ever last,
'Tis but the lull be-
fore the blast ;
But his great peace
Shall still increase
In mighty, all-re-
joicing sway ;
His kingdom in thy
heart can never
pass away.
FRANCES RIDLEY
HAVERGAL.



THE NEW RAPHAEL

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A BELL

Had I the power
To cast a bell that
should from some
grand tower,
At the first Christ-
mas hour,

Outring,
And fling
A jubilant message wide,
And forged metals should be thus allied ;—
No iron Pride,
But soft Humility, and rich-veined Hope
Cleft from a sunny slope ;
And there should be
White Charity,
And silvery love, that knows not Doubt nor Fear,
To make the peal more clear ;
And then to firmly fix the fine alloy,
There should be Joy !
CLINTON SCOLLARD.

THERE'S A SONG

There's a song in the air!
 There's a star in the sky!
 There's a mother's deep prayer
 And a baby's low cry!
 And the star rains its fire while the beautiful sing
 For the manger of Bethlehem cradles a King!

We rejoice in the light,
 And we echo the song
 That comes down through the night
 From the heavenly throng.
 Ay! we shout to the lovely evangel they bring,
 And we greet in his cradle our Saviour and King.

—J. G. HOLLAND.

THE EVANGEL OF LIBERTY

(Continued from November Journal)

THE criticism has been passed that we want "too radical teaching in regard to alcohol, teaching that is not true."

In other words, the question is: Are the indorsed temperance physiologies accurate.

Without fear of successful contradiction I reply that as far as truth is yet ascertained, they are. Soon after the revised and indorsed books began to go quite universally into the schools, some eight or nine years ago, vague criticisms of inaccuracy began to be heard. In spite of the utmost probing on our part no specification of what these inaccuracies were could be got from anybody, except that here and there statements which could be quickly shown to be well supported by one well read in the authorities were objected to.

"But did not Professor Atwater prove the books inaccurate?" some one may ask. Through the press he was reported as saying he had proved that alcohol is oxidized in the body, yielding heat and energy, and that he had also proved that alcohol protects the material of the body from consumption just as effectively as do corresponding amounts of sugar, fat, and starch, and therefore is a food. Consequently, the indorsed text-books are in error in teaching that alcohol is not a food but a poison. Did he prove all that? First, the fact that a substance is oxidized in the body liberating heat and energy does not prove it to be a food, for many virulent poisons are thus oxidized and liberate heat and energy but kill at the same time. This is true of muscarine, morphia, carbolic acid and other substances. If oxidation proves a substance to be a food then these deadly poisons are food. The idea is absurd.

Did he prove that it protected body material?

Five months after this newspaper campaign had flooded the country with the notion that alcohol is a food, the tables were published which showed the physical condition of the man

Professor Atwood experimented on in the calorimeter with alcohol diet. The figures in those tables showed that instead of alcohol protecting the material of the man's body from consumption, and therefore acting as a food, the man lost on that diet so much vital body material (protein) that Professor Herter, of Bellevue Medical College, New York, said the results of these experiments pointed to alcohol being a protoplasmic poison instead of a food. Not only other eminent scientific men but the leading medical journals of the country assert that Professor Atwater did not prove alcohol a food and not a poison. Thus that attempt to prove the teaching of the indorsed books inaccurate has gone up in smoke.

Another effort that came to a similar end calls for brief mention. Three medical men known as opponents to this instruction got themselves chosen as a committee from a medical society to examine and report on these text-books. Agitation that grew out of this appointment may have delayed their work. However that may be, five years after they were chosen they published a list of some seven statements claimed to be errors found in some thirty books. Five out of these seven so-called errors were found to be supported by the strongest medical authorities in the world. The other two, only one of which was on alcohol, were statements not sufficiently guarded which had escaped the vigilant eyes of author and proof-readers. They were immediately corrected. That only two such were found in thirty books after prolonged research by active opposers is itself the best evidence of the reliability of our indorsed books.

But is alcohol a poison? Editorials have appeared in one of the religious journals, The Outlook, which claim that we should teach that alcohol is sometimes a food and sometimes a poison, but The Outlook gives no data by which the pupil can decide when he would be fed or when poisoned by alcohol.

Tens of thousands of drunkards' graves in our country, hundreds of thousands in the world are yearly filled by those who have decided by deadly personal experience that alcohol has poisoned them.

The character of a substance does not change with location. What then is the truth we should teach in the matter. Truth is not only eternal but universal, and when attention is once aroused, it finds advocates in all lands which in our day are so linked together that more than ever

"Mankind are one in spirit, and
 Instinct bears along
 Round the earth's electric circle, the
 Swift flash of right or wrong."

Professor Atwater's claims for alcohol are being answered by the laboratories of Europe as effectively as at home, and this claim of The

Outlook that alcohol is both a food and a poison is overwhelmingly refuted by the scientific testimony of two continents. This is voiced by Professor Max Kassowitz, a noted specialist of Vienna, who has just published in a leading German medical paper (*Deutsche Medicinische Wochenschrift*, 1900, No. 32) a careful review of all the recent investigations on the food value of alcohol. After a critical examination of all the claims that have been made for it he gives this as his decision:

"Alcohol for the animal and human organism is not a food and at the same time a poison, but a poison only, which like all other poisons in large amounts has a deadly, paralyzing, and disease-producing action, while in small doses it has only an irritating effect." The children in our land are heirs to the whole truth and nothing but the truth of this question. To teach them less is a crime against their future and against the future of our land soon to be governed by them.

It is not too much to say that not a claim in favor of any form of alcohol as a beverage has been made that is not overwhelmingly refuted by the best experimental science of to-day. Professor Victor Horsley, one of England's

greatest medical men, says: "From a scientific standpoint total abstinence must be our course if we are to follow the plain teachings of truth and common sense."

Alcohol a food! It is the greatest of all feeders of crime, poverty, misery and madness. When once it gets an entrance it thrusts its destroying hopeless dominion over its victim. It enters the innermost sanctuary of individual being with a power that destroys every other love and interest. It enters where nothing else can. We say God has all power, but there is one threshold before which even Omnipotence stops and waits to be bidden to enter, and that is before the often weed-grown door of the human heart. In pleading tones the Master urges, "My son, my daughter, give me thine

heart." You may accept or reject as you choose. God never forces the will; it is your own. But what God thus respects, alcohol overthrows and makes its own unwilling bond slave. The poor victim writhes under the chain it can not break.

Alcohol a food! It feeds the bottomless pit with the noblest and bravest of our land. Our children should be warned against its awful power and be shown the scientific connection between the first glass and the drunkard's fate. The student of the alcohol question who also knows what the indorsed text-books teach knows that in them we are not asking for more than the truth to be taught.

We are living in the last days of the most wonderful of centuries. Truth is rushing in upon us as never before. The achievements, discoveries, and inventions of the last one hundred years outstrip in number and effect those

of many preceding centuries combined. Great nature's secrets hitherto hidden have been revealed to man's research and made to be his servants. We have imprisoned light, made lightning do our bidding and carry both us and our messages. We have annihilated time and distance in our methods of intercommunication until the world is one vast whispering



"The angels come and go, the messengers of God!
Nor though they fade from us do they depart—
It is the childly heart."

gallery, and distant nations answer our morning salutation almost as soon as the neighbor over the fence. This article opened with Humboldt's saying that "change is the watchword of this world." This was never so true as now. Changes are so many and so rapid as almost to cease to excite wonder. The trend of them all is to set people thinking, to liberate them from old bondages, from the helplessness and solitariness of isolation, from the uncertainty and darkness of ignorance, and to develop a neighborly helpfulness among nations and peoples little understood in other times.

In that classic history, "Fifteen Decisive Battles of the World," written by an Englishman fifty years ago, after dwelling on the greatness that we as a nation had then attained and

the effect that greatness and power were likely to have upon other nations facing our Pacific Coast when that portion should be settled by us, Dr Creasy, the author, says :

"The intercourse of traffic between these ancient Asiatic monarchies and the young Anglo-American republic must be rapid and extensive. Any attempt of the Chinese or Japanese rulers to check it will only accelerate an armed collision. The American will either buy or force his way. Between such populations as that of China and Japan on the one side, and that of the United States on the other—the former haughty, formal, and insolent; the latter bold, intrusive, and unscrupulous—causes of quarrel must sooner or later arise. The results of such a quarrel can not be doubted. America will scarcely imitate the forbearance shown by England at the end of our late war with the Celestial Empire; and the conquest of China and Japan, by the fleets and armies of the United States, are events which many now living are likely to witness."

This is a good illustration of the growth beyond British expectation of neighborly feeling in our Christian republic toward other nations. The United States, instead of over-running China with troops and fleets, in pursuit of gain, as Dr. Creasy predicted, is to-day leading the allied powers of the world in an effort to save China an unbroken nation in spite of the insane attack of her Boxers upon the representatives of the governments of all Christendom.

Our glorious heritage in the boundless resources of our country has made us the richest nation the world ever saw. Wise men, our fathers, in planning our free institutions, with universal education and a fair chance for all, laid broad foundations for our freedom. These, with God's guidance in the application of the philosophy of Calvary, have given our republic the place we now hold as one of the greatest world powers. Freedom based on equal rights to all does not develop an unscrupulous but an altruistic people.

In the Spanish war, much as that cost some of us, we saw more clearly than ever before the God-appointed mission which we must live up to, as the Evangel of Liberty among the nations of the earth. Although we are not looting China to-day, and although we have given to Cuba her freedom, there is one dark blot on our escutcheon in our dealings with these child races which have come to our care. The *Brewers' Journal* reports sending to our new possessions 100,000 barrels more of beer last year than ever before. The story of the consequences of the beer traffic in the Philippines is heart-sickening to every one who loves his country's honor—consequences sure to come back to curse us and to complicate our efforts

to civilize these people. Beer is a poor civilizer. It is rather a savage-developer.

We saw that ancient and mediæval nations rose or fell in proportion as they opened the way for the philosophy of Calvary. As a nation we have been held to that philosophy. In spite of opposition we freed the slaves, and to fulfil our mission we must stop this stream of alcoholic destruction flowing from our shores as well as through our land. Ten million people, representing the drinking habits of almost every nation under the sun, have come to our country to stay, and the men to vote. Almost our only chance of reaching them is through the schools, and in the lower grades. Thus our duty to temperance education, our work as the evangel of liberty for all lands has come to our very doors. Educate the children of these new-comers to total abstinence and they will be the staunchest allies of this reform. Neglect it and they will swamp us. It is the case of the life-pump on the leaking ship.

Has there come in some places a reaction against scientific temperance instruction in the public schools?

Certain parties, for purposes of their own, are trying to create such. The effort to prove alcohol a food is indicative of that purpose. During the past year, from many sources, the assurance and sometimes the threat has come to me that if I would only consent to have the teaching that alcohol is not a food but a poison taken out of the indorsed text-books, all the trouble including personal attacks would cease; if I would not do this something dreadful was to happen.

My reply has always been, "I will certainly do all I can to secure this change if you can prove that alcohol is a food and not a poison, as the people understand those words; but until that is proved, I must stand and having done all, stand."

The century opened with everybody thinking alcohol a food, while the curse of drink threatened the health and morals of civilization. It closes with alcohol arraigned before the bar of scientific investigation to answer to the charge of manslaughter in nearly every civilized country in Europe. The French Academy of Science, the universities of Germany, Austria, Switzerland, and Belgium are studying the question; leading professors in those countries are taking the witness-stand to testify against it. Russia has just organized a commission for a most extensive investigation covering the social, legislative, and legal phases. In beer-drinking Germany there is a society of total abstaining teachers and another of total abstaining physicians, both issuing testimony against alcohol in regular publications. The Kaiser has found that alcohol reduces the efficiency of his soldiers from fifteen to twenty per cent, and

both he and the emperor of Russia are seeing the failure of restrictive measures and are trying prohibition.

We have gone farther than most European countries in requiring this study in our schools, while from all this investigation in Europe and our own land there is coming upon us a continuous stream of truth which is all one way. Opposers can no more keep this truth about alcohol from the people and their children than they can keep back the water at high tide with a board fence. The mighty force that is always back of truth is as resistless as the tides of ocean. In the councils of God the hour is set in not distant years for the emancipation of our land from alcohol through the universal education of the people.

Glorious is the opportunity open to all to work for that coming, and to hear at last the "well done" when the alcoholic and other narcotic bondage is no more.

Not far from the lot where my own precious dead are buried in Forest Hills Cemetery in Boston is a mound before which I have stood with reverent thankfulness for the great soul whose earthly body lies buried there. It is the grave of William Lloyd Garrison, the man who said when urged to modify or retract his denunciation of slavery:

"I will be as harsh as truth, as uncompromising as justice; I will not equivocate, I will not excuse, I will not retreat a single inch, and I will be heard." He was heard and because he was, slavery is no more. Such graves are the waymarks in human progress. In the midst of the battle he was maligned, his motives impugned, a price set on his head; he was imprisoned in his own city, Boston; the newspapers denounced him; he was called a firebrand, was scoffed at and forsaken. But he faltered not. After the reform for which he labored was accomplished, he left a message. Listen, it is for us:

"Henceforth through all coming time, advocates of justice and friends of reform, be not

discouraged; for you will and you must succeed if you have a righteous cause. No matter at the outset how few may be disposed to rally round the standard you have raised—if you battle unflinchingly and without compromise—if yours be the faith that can not be shaken, because it is linked to the Eternal Throne—it is only a question of time when victory shall come to reward your toils."

The cause of temperance education for the children of this nation is just; it is God's cause. We will battle for it unflinchingly, unitedly, and without compromise, linking our faith, prayers, and work with Omnipotence to hasten the glad emancipation day from the bondage of alcohol.

MARY H. HUNT.



"The air is shaken with white and heavenly wings—
This is the Lord of all the earth, this is the King of Kings."

PEACE ON EARTH

Nineteen hundred
years ago
Came a message
sweet and low;
O'er an infant's humble birth
Fell a new strain to
the earth;
Angels sang the chorus then,
"Peace on earth,
good will to men."

Since that dim and
distant time
War has been in
every clime;
Earth has been submerged in blood
Of a common brotherhood;
But the few were
singing still,
"On earth peace, to
men good will."

In this later, brighter
day,

Are we nearer peace than they?
Still our soil with blood is wet;
War is round about us yet.
Will the carnage ever cease?
Yet we hear the song of peace.

It will come,—'tis not a dream!
Through the darkness shines a beam.
'Tis a glimpse, a prophecy
Of the years that are to be;
Of a new time come to birth—
Of the dawn of peace on earth.

J. A. EDGARTON.



WE are beginning to realize that "we can not do justice by the soul of a child while we are doing injustice to his body."

Society no longer contents itself with classing individuals as brilliant, mediocre, and stupid. It demands the reason for such classification. It asks how these individuals are fed, sheltered, trained, where they are brought up, who their parents were. And with clearer insight into the causes which make the adult what he is, has come a degree of knowledge as to how the youth may be helped to develop into sturdier manhood.

The question of the relative value of foods and their effects upon the system is not yet fully solved by the scientist, but this is no reason why the child should not be taught what foods are wholesome and suited to his needs, and what combinations are most likely to check development. If the body is not well nourished in youth there is no second chance to make good the deficiency. Instruction must be given early and often to be of value.

In the present lessons the leading thoughts to be developed are:

What food does for us.

Where it comes from.

The best kinds to choose.

As lack of space prevents the full development of each topic, the first only is given in detail. With this as a guide the teacher can easily present the second and third topics also in story form—the guise in which facts are best impressed upon the child's mind.

WHAT FOOD DOES FOR US

Richard's father was a large strong man. When he came into the house Richard would run to meet him and he would toss the little fellow up to his shoulder and run with him through the house, looking for mother. It was great fun.

"I wish I were a big man like you," Richard said after the frolic was over and he was perched on his father's knee.

"Never mind, my boy; you will catch up

with me fast enough. Why, you can do something now that I can't."

"What?" asked Richard with very wide open eyes. It did not seem possible that such a little fellow could beat his splendid big papa at anything.

"You can grow," said his father, "and I have to stay just the same size I am now."

"What makes me grow?" Richard asked next.

"The breakfast you ate this morning helped, so did your dinner. Much of this food you eat is changed into the different parts of your body and so makes you taller and heavier than before.

"When you feel hungry it is because some part has not been getting its share to eat and needs to be fed. If you did not eat at all you would stop growing and starve. We must take food to keep us alive."

"If I eat a lot will I soon be as big as you?" asked Richard.

"You will grow quite fast enough," said his father, "if you eat a good meal three times a day. But it wouldn't help matters any to eat more than you need. It would only make you sick.

"The food you eat has something else to do besides making you grow. It has to keep you from wearing out.

"What did mother do to the trousers you wore a hole in yesterday?"

"She put a patch on them," said Richard, and now they are just as good as new."

"When you run and play you wear out your body as well as your clothes," said his father; "but a good night's rest and the right kind of a breakfast or dinner repairs them again much better than we possibly can our clothes. We can not find the place where our bodies are mended, so you see our food is a better dress-maker than mother even.

"When boys and girls get to be men and women their bodies wear out so fast that all the food they eat is needed to keep them in repair. That is one reason why they stop growing tall.

"Food does another wonderful thing for us. It helps to keep us warm."

Just then the supper-bell rang and Richard started off on his father's shoulder to find mother.

WHERE IT COMES FROM

Tell the children what you had for breakfast this morning before coming to school. Ask what each one of them had.

Write their answers on the board, omitting duplicates and placing wholesome foods in one column and unwholesome foods in another.

FRUITS

Begin this lesson with a talk about fruits which the class have seen and tasted, giving

every child a part in the discussion. Ask them to name the fruits they like best. Find which ones they have seen growing. Did these grow on trees, vines, or bushes? Have them describe as well as they can how grapes grow; plums; berries. Have as many different fruits as you can easily get on a plate before you as you talk about them, and give each child a taste at the close of the lesson.

Find how many pupils live on a farm or have spent some time in the country. Ask such to tell what fruits grew there and what time of the year each ripened. Ask what the farmers did with the ripe fruits. Have them name places where people do not raise fruit. How do those who live in large cities get fruit to eat? Where does it come from?

Lead the children to compare the familiar home fruits as to shape, size, color, taste. Ask what parts of the apple are good to eat; of the plum, peach, grape. Explain to the class why one should not swallow the skins, seeds, or stones in eating fruit.

Take up, next, fruits which do not grow in our country but which are familiar to every child from fruit-stands or grocery stores. Show pictures of the orange, lemon, pineapple, banana and grape fruit, and tell something of how these fruits are cultivated. Explain why they are picked when green and how they are sorted and packed for transportation. Every attractive picture, story, and song about fruit which will help to make the topic interesting should be saved for this lesson, and utilized by the teacher.

GRAINS

Group together the breadstuffs and cereals used as foods which have been mentioned by the class. Have samples of all the common varieties in tiny bottles and show the children. Show also the different grains used for food.

Find how many of these food grains are familiar. Ask those who have seen them growing to tell the others about it. Describe a rice field to them and show pictures of men sowing this grain in the water. Explain why we do not raise rice here.

Draw a picture of the wheat stalk on the board, if the plant itself can not be had for examination, and beside it sketch a sack of flour

and a loaf of bread. Tell where the wheat grows. Show pictures of sowers. Explain how grain is gathered to-day, reaped, bound and threshed on the field by machinery, then sent to every part of the world. Contrast present methods with the sickle and flail in use sixty years ago.

So far as possible have the children explain how wheat is made into flour and bread. Go through the process in pantomime, having the class imitate. Cut open a kernel of wheat, showing the outer husk, the hull, and fine white inner part. Show white bread and that made from the whole wheat. Explain why the latter is more nutritious and hence a better food.

What else is wheat used for besides bread? Show the different cereal foods made from wheat. Let the children tell some of the ways in which they have seen their mothers use wheat flour—for making biscuits, cake, pastry, cookies—but explain that the best use of all for wheat is to make it into bread.

Pour out some of the different grains into piles on a tray. Let the children name each kind, and tell one or more of the uses to which it is put. They will readily think of such common foods as corn bread, johnnycake, rye bread, barley for thickening soups, oatmeal, boiled rice, buckwheat cakes.

MEAT

Outline an egg on the board. Find how many of the children know where eggs come from and extend their knowledge beyond the crates in a grocery store. Show the picture of a nest of eggs or sketch such on the board. Tell a little story of the hen cackling with delight as she lays an egg for our breakfast, then of her patience in sitting day after day on her nest until the little chickens are hatched and ready to run about with their mother. Country children will know these facts and be full of interesting stories of their own, but it will all be new to their less fortunate city cousins.

Show the picture of a large cattle ranch. Ask the children what the flesh of an ox or cow is called when we use it for food. Let them mention other animals used for food, and give the name of the flesh of each.

Ask what kinds of food come from the water;



"I wonder if Santa Claus has come yet?"

rivers, lakes, or the ocean. Where do we get clams, oysters, sardines, shrimps, herring? This list of sea foods should be varied by the teacher to include only those which the class have seen or tasted.

Find how many know what animal food we eat on our oatmeal in the morning. Many children in the city know nothing of milk beyond the cans of the milkmen. Show them pictures of cows at pasture and again in the milking-shed. Describe a creamery and tell them how milk is made up into butter and cheese.

VEGETABLES

Find how many of the children have been in a garden and have seen vegetables growing. Ask such pupils to describe one or more of the following: Lettuce, peas, beans, potatoes, squash, turnip, celery, radishes, tomatoes, onions, cauliflower, asparagus, cucumbers, beets, parsnips, cabbage. Outline each of these vegetables on the board as it is described by the children. Help them to decide what part of each we eat; which vegetables need to be cooked before we eat them; which are best eaten raw.

Describe a sugar plantation, and tell the class in story form how the sugar we use on the table is made from the cane. Ask some one who has seen maple trees tapped to tell where we get our maple sugar and how that is made.

Give an account of an old time "sugaring off," and the fun it meant to children in the country.

Ask those who can, to think of other trees besides the maple which give us something to eat, and name them. Many boys, even in beginning classes, have gone nutting and are thoroughly familiar with the looks and taste of our native chestnut, hickory nut, beechnut and butternut. Let them tell what they know about each; where it grows, what the tree looks like; how one can tell the different trees from their shape, leaves, and bark as well as by their fruit.

THE BEST KINDS OF FOOD TO CHOOSE

Show the picture of a large handsome cat. Help the children to notice how smooth and glossy her coat is, how bright her eyes are, and how fat and comfortable she looks.

Get the children to tell you about the pet cats they have at home. Do they look like the cat in this picture?

Find how many have seen a homeless cat. How did she look? What made her thin and poor?

Point out the difference in the way the two have been fed; the first regularly, with good wholesome food, the second only with such scraps as she could pick up here and there and with what she could get by hunting.

What kind of food do we need to keep us

strong and well? Will anything less than the best do for growing boys and girls?

Explain to the children that the best food is not necessarily that which costs the most or that which tastes the best, but that which builds up the body and makes it strong.

What is the baby's first food? Refer to some fat rosy-cheeked baby who has been brought up on milk alone. Point out what this food has done for him. It has made him taller and heavier; it has been changed into flesh and blood and bone and muscle; it has kept him well and hearty.

Help the children to see why the baby can not eat solid food as we can. Ask what our teeth are for. Show that if they are for use as well as ornament we must not swallow our food until the teeth have had a chance to do their work.

Refer to the list of wholesome foods on the board and tell the little ones why each is good.

Whole wheat bread, eggs, lean meat, milk, cheese, peas, and beans give us strong bone and muscle, and make us grow tall.

Butter, cream, olive oil, potatoes, corn, rice, oatmeal, sweet fruits and vegetables make us round and plump, and help to keep us warm.

Would it be good for us to have all these foods at once? Why not? Help the children to select from these foods those which would make them good breakfasts, dinners, and suppers.

Give them simple rules about cooking common foods; for instance, that eggs are better for us when the white is a soft jelly instead of being hard-boiled; that pork and all white meats must be cooked very thoroughly; that meats are much more wholesome when roasted or boiled than fried; that foods cooked in hot fat are hard to digest and should not be eaten by children.

Bring out some of the ways in which children differ from grown-up people. They are not so tall or strong or large; they can not lift as much, run as fast, work as hard; their arms and legs and all parts of their bodies are smaller and weaker. A child is not able to do the work of a man.

Show that his stomach is weaker, too, and should not be called upon to digest as much food as that of a grown person, nor even the same kinds of food. Explain that this is the reason why children should not eat mince pie or other pastry, rich cake, or sweetmeats, highly spiced or seasoned food, and why they need but little meat.

Help them to form a liking for fresh ripe fruit rather than made desserts, and water or milk instead of tea and coffee.

Tell the children the danger in eating unripe fruits or those which have begun to decay. In this connection, explain why wine, cider, beer,

and other like drinks are unwholesome. They are made from good fruits and grains, but a poisonous substance, alcohol, has formed in them which makes them no more fit to drink than decayed fruits or vegetables are fit to eat.

Show that in one way these drinks are even more harmful than decayed food substances, because they have the power to make the drinker like them so well he can not give them up.

AUTHORITATIVE QUOTATIONS

Certainly alcohol can not be regarded as an efficacious food for muscles, nerve cells, and the like. Not even in a narrow sense can it take the place of a force-generating food stuff. Experiment has shown that alcohol actually hastens bodily tissue waste.—ADOLF FICK, M.D., University of Würzburg.

The consideration alone that a substance is oxidized in the body in no wise justifies its use as an energy-furnishing food.—ROBERT KOPPE, M.D.

Alcohol is a poisonous matter. Even when partaken of in the most temperate way it plainly interferes with the functions of the various organs. It can not be regarded as either nourishing or strengthening, and therefore it is of no use whatever in a normal diet.

AUGUST FOREL, M.D., University of Zurich.

ALCOHOL A POISON.

To get energy from alcohol we run great risk of poisoning, and to get any amount, such as would be necessary to support life in ordinary conditions, we must take enough alcohol to poison ourselves seriously.—HENRY F. HEWES, M.D., Harvard University.

CHRISTMAS MORNING

God with his million cares
Went to the left or right,
Leaving our world; and the day
Grew night.

Back from a sphere he came
Over a starry lawn,
Looked at our world; and the dark
Grew dawn.

NORMAN GALE.

OUR BETHLEHEM

The whole earth is our Bethlehem
Hosannas ring from every sky!

* * * * *

By any shore or mount or sea
Where faith and hope and love abide,
And self is lost in sacrifice.
There the celestial gates swing wide
And heaven descends to human eyes!
There Christ the Lord is born again:
There is his new Nativity!

EDNA DEAN PROCTOR.

AN ACKNOWLEDGEMENT

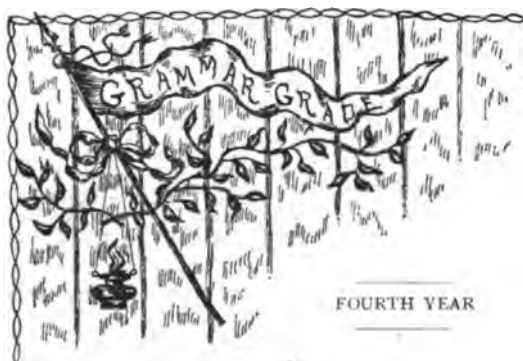
THROUGH an unfortunate oversight credit was omitted in previous issues of the JOURNAL for the courtesy of Mr. La Farge, Mr. Simmons, Mr. F. D. Millet, Mr. Bela L. Pratt, Mr. Edwin A. Abbey, and their publishers, Messrs. Curtis & Cameron, in allowing the reproduction of several of their pictures in these columns. We regret exceedingly the omission and wish, even at this late day, to extend our cordial thanks to both artists and publishers for the privilege of reproducing some of their valuable pictures.



The thought of Christmas is giving.
The heart of Christmas is love.

We would also call special attention to The New

Raphael which appears on page 49 of this issue of the JOURNAL. The original is from an oil painting now in possession of Count Ferlet de Bourbonne, in Paris, and is attributed to Raphael. The picture was bought in Burgundy three years ago by the Count for five francs; but it was concealed under a painting in distemper. This was discovered when the Count decided to fit the canvas into an old frame. He placed the picture in the hands of a competent restorer who cleaned and varnished it, and returned to its owner a beautiful picture, which, on investigation, proved to be exactly like an engraving of a painting attributed to Raphael which was owned in 1720 by the Duke of Orleans, Regent of France. Mr. Champney was given the opportunity of making a pastel direct from the painting, and the Copley print from which this picture is made is taken from that pastel.



THE BLOOD

THE medical profession counts as its greatest triumph the discovery that disease may be prevented as well as cured.

Why is it that Europe no longer suffers from the periodic scourge of pestilence, and the United States has ceased to dread yellow fever? Not because these fell plagues have lost their virulence, but because we have learned how to fight them on their own ground. The comparative immunity of the civilized world to-day to the most contagious diseases, and the ease with which such diseases are confined to ever narrowing areas or entirely stamped out, is due chiefly to our increasing knowledge of sanitary laws and our better observance of the rules of health.

The introduction of hygienic physiology into every public school in the land has done more than any other agency to bring such knowledge into the home life of the people and change their thinking and their habits.

Every school child is taught now, what the most learned scholars had not thought of a century ago, that the way to keep typhoid fever out of a community is to guard the water supply from the germs of impurity and disease. He is learning also that the circulation of the blood bears a similar relation to his body as the water works and drainage system to a town, except that the former, from its greater delicacy and the more complex workings of its living nature, is more easily got out of repair and needs more careful attention.

Thanks also to modern methods of instruction, no drunkard or victim of narcotics can soon plead ignorance as the cause of his downfall. When every pupil in our schools has learned the awful power of narcotic habits to perpetuate themselves, and forge chains for their devotees which the human will is not strong enough to break, we may look for clean lives as well as sanitary homes.

There is room only for encouragement in what has already been accomplished, but our work will not be done until ignorance of health laws has everywhere given place to knowledge, and

the human body, made strong and vigorous by right living and right thinking, has become indeed a fit temple for the indwelling spirit. Every lesson in physiology should aim at this result.

WORK OF THE BLOOD

Call attention to the varieties of food with which our markets and groceries are stocked. Yet the people would starve in spite of this abundance if it remained in the markets. It must be distributed to every family.

Show that the human stomach and alimentary canal are like a market in this respect. They receive food and store it until it is ready for use in the body, but they do not distribute it to every part. This is the work of the blood, and without it the body would starve, because the food shut up in the digestive organs could do it no good.

What else does every part of the body need besides food? Why does sitting in a close room often give one a headache? Why can we always work or play better after a brisk walk in the open air?

By questions similar to these show that the oxygen of the air is just as necessary to life as food is. Show that when oxygen is breathed in it goes to the lungs, just as food goes into the alimentary canal, and that to be of service to other parts of the body it too must be carried to them. This is another part of the work of the blood.

Tell the class as much as they can understand of the composition of the blood; that each drop is made up of a great many very tiny red cells and a smaller number of white cells all floating in a nearly colorless liquid.

Fill a small bottle of water with red sand and show that this makes the water look red. So the red cells or corpuscles of the blood make it look red.

Explain that the red cells carry food and oxygen which every part of the body needs; the white cells act as a kind of body guard to destroy disease germs and keep every part of the body well. They are like the soldiers Uncle Sam stations in different parts of his country to keep it in order.

What else do we have to do to make a fire burn besides put in coal and open the drafts to let in oxygen? We must keep it free from ashes. Show that there is waste matter always forming in the body as well, and that another part of the work of the blood is to collect this waste and carry it to the lungs to be thrown off.

ORGANS OF THE BLOOD

Put a diagram of the circulatory system on the board. Help the class to trace the digested food from the different points where it enters the blood to every part of the body. Have them find from their text-books in what part of

the alimentary canal the different kinds of food are absorbed into the blood.

Call attention to the fact that the bulk of our food is taken up by the lacteals from the small intestines and emptied into a large vein just before this reaches the right side of the heart.

Ask the class to find where the blood goes when it leaves the right side of the heart. Why does it need to go to the lungs? Why does the digested food empty into a vein rather than an artery?

Make a cloth model of the heart showing its valves and cavities, and explain why each is needed. Show a sheep's heart. Why are the walls so thick and strong? What is the use of its outside sheath?

Explain the difference in structure between veins and arteries. Help the class to think why the walls of the latter need to be elastic. Why does the blood flow in waves or spurts when an artery is injured and in a steady stream from a vein?

Call attention to the decrease in size of the arteries as they divide and sub-divide until they form capillaries. Show that the capillary walls are thin enough to allow the food and oxygen in them to pass out of the blood into the tissues of the body, and worn-out particles and carbonic acid to pass back into the blood from the tissues, ready to be carried by the veins to the heart. Why must all blood go to the heart before it is sent to the lungs? Why must it go again to the heart from the lungs before being sent over the body?

CARE OF THE BLOOD

It is easy to think how we can take care of parts of the body which we can see, but more difficult to know just what to do to keep those parts which are out of sight in good repair.

Compare the circulatory organs of the body to the mail system of our country. What happens when mail trains are tied up, as sometimes happens in a strike? Why does the government take every possible precaution to prevent accident or delay to the mails? Why does it take care to employ trusty men, to have strong mail cars and insist upon their being kept in good repair?

Show that the circulation of the body is far more important because it keeps us alive. How can we help its work?

Ask the class to find what makes good blood. Help them to think what foods are best, and what are unwholesome. Where can we find the oxygen the blood needs? How can we be sure of getting enough? Why do we need it at night as well as in the daytime?

Help them to find from their text-books and other sources how the blood is injured in quality by alcoholic liquors and tobacco, and how these poisons hinder its work.

Why is there great danger of sickness and disease breaking out in a town where the water supply is polluted or the sewerage system stopped up? Point out the greater harm done to the human body when its great circulatory system is interfered with. Can we afford to take the risk?

AUTHORITATIVE QUOTATIONS

ALCOHOL A PARALYZER

Our blood-vessels have muscular fibers in their walls. Alcohol paralyzes these muscular fibers; as a consequence the blood-vessels dilate and more blood than usual passes along them. The muscles are made a little stronger for the moment; but, as there is no increase of blood in the body, the effect lasts only a short time, and the muscles are soon weaker than before.—A. G. MILLER, M. D., F. R. S. C. E., Edinburgh.

ALCOHOL INJURES THE BLOOD

Alcohol impairs the corpuscular elements of the blood, lessens the activity of the leucocytes, and favors tissue degeneration in the direction of fatty, fibroid, and sclerotic changes.—N. S. DAVIS, M. D., LL. D., F. R. S., Chicago.

The price paid is the destruction of the cellular tissues of the system which are destroyed by the minutest amounts of alcohol taken. The foremost writers on physiology of the world tell us that its use is a positive injury.—A. MONAE LESSER, M.D.

ALCOHOL WEAKENS THE HEART

Blood containing two and one half parts per one thousand of absolute alcohol, almost invariably diminishes within a minute the work done by the heart.—H. NEWELL MARTIN, M. D., F. R. S., Johns Hopkins.

ALCOHOL DIMINISHES OXIDATION

Alcohol forms a compound with haemoglobin, a component part of the blood, the function of which is to take up oxygen from the air in the lungs and distribute it to the tissues, and this compound takes up and gives off oxygen less readily than the haemoglobin itself. This means, of course, that alcohol diminishes the oxidation which should go on in the body and thus lessens the normal tissue changes.

—THOMAS EASTON, M. D.

TOBACCO DISTURBS THE HEART

Disturbed heart action, rapid and intermitting pulse, weakness, faintness and collapse occur. The central nervous system is affected. Non-smokers get on better in school than smokers. Children who smoke exhibit less intelligence, are lazy and have other degenerative tendencies.—E. S. TALBOT, M.D.

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"Thine to work as well as pray,
Clearing thorny wrongs away;
Plucking up the weeds of sin,
Letting Heaven's warm sunshine in."

A LOOK AT OUR COUNTRY

A FIVE weeks' trip in the middle and western states of addresses and talks before the Woman's Christian Temperance Union, state conventions, school, college and citizen audiences, teachers' institutes, and state teachers' associations has just closed, and I am at home again.

OUR GREAT RESOURCES

As I sit in my own study, with the autumn sunshine flooding the room, and recall the impressions brought back from this trip as compared with those received when I have been over the same ground in other years, I am conscious of an increased sense of the vastness of the growth and development of our country. The manifest newness of the West this side of the Rockies that used to impress one from the East is gone, while the air of well-being one sees on every hand bespeaks an increase in wealth that is one great source of a people's material power.

And the country itself as it lies under the autumn sunshine, its vast prairies and broad fields having yielded up for this year their boundless harvests, and with the mark of the furrow for next year's fruitage already upon them—who can find words ample enough for a description of this country?

And its people well-dressed, well-behaved, with an air of comfort and even affluence that tells of good American homes—not in any other land in all the world will you find their equal.

Everywhere schools free to all, colleges, churches, beautiful cities and villages, and any career even to that of president of this republic open to any mother's son who has the ability to achieve it. These boundless resources and blessings of liberty make our glorious land a priceless heritage, and should make its people jealous of whatever threatens its marvellous development.

OUR GREAT MENACE

Alcohol is its greatest menace because it destroys that character which is essential to liberty. The Woman's Christian Temperance Union is organized for the overthrow of alcohol, and therefore for the protection of the liberties of the people against its greatest foe. Is that organization of women on the decline? This is a question to which a lover of his country may well listen with bated breath.

From my observation during this western trip which has covered the very heart of our country in its most populous states, I am certain the Woman's Christian Temperance Union is not on the decline. Death and time are changing its personnel, but the depleting ranks are more than filled by new recruits who show the same realization of the evils of alcoholism and the same consecrated determination for their prevention that fired the hearts of the crusade mothers. Its members feel the mighty inspiration of the fact that the work of the organization is not yet done, and will not be until a generation of intelligent total abstainers are educated through our public schools to dethrone alcohol. Atwaterism or whatever else stands in the way of that education is recognized as something to be overcome.

OUR HOPE FOR THE FUTURE

Presidential trains like meteoric lights again and again shot across the path of my itinerancy during the last five weeks. As I watched in vain the utterances from representatives of the dominant parties on these trains for any reference to freedom's greatest enemy, alcohol, I recalled what Victor Hugo said to his countrymen when Louis Napoleon declaimed himself emperor of France, and no man dared protest:

"You think progress is stopped. You are mistaken. Do you not hear in the shadow beyond that muffled sound? Do you not hear some one moving backward and forward? Do you not see that the breathing of that which is behind makes the canvas tremble?" That painted pageant—the second empire—perished because the course of human freedom can not be permanently checked. Likewise whatever stands in the way of the highest development of the individual in our country must perish. There can be no survival of the fittest otherwise.

The cause of anti-alcoholism is freedom's cause and it is neither dead nor sleeping in our country, although some of its fair weather friends are rather somnambulant. The American people, who can always be trusted to act rightly if they only understand the question, will yet dispose of the alcohol problem as they have already disposed of the financial heresies which have asked their ballots. In God's good time the truth shall make us free.

DECEMBER

"Ah, this is the merriest month of the year,
Filled with gladness and joy and with rousing good
cheer!

Though there's ice on the ponds and there's snow
on the ground,

Green holly and misletoe ever abound

To tell us of Christmas, of hope and of light,
When hearts are all merry, and happy, and bright.
So we laugh at the winds and we scoff at the snow,
And we chuckle the louder the harder they blow."

THE FUTURE OF UNCLE SAM

MR. CHAIRMAN, LADIES, AND GENTLEMEN OF THE
OHIO STATE TEACHERS' ASSOCIATION:

ONE evening this week it was my fortune to hear an orator who thrilled the hearts of a great audience with the story of the boundless resources of our country, its history, its people, its stainless flag, and all that flag stands for in the future of the world. Then, as a climax, he asked:

"Will Uncle Sam have a glorious old age?"

The suspense was intense. Every man and woman there seemed ready to spring, if need be, to the defence of the nation's future.

The speaker paused and repeated the question, but I ceased to follow him and began this thinking of my own: What are the sources of a nation's power? Not its armies and navies. These are only manifestations of power. The real strength of a republic is the character of its people, their capacity to govern themselves. What are the feeders of character that make a people capable of self-government and key them to the moral strength that endures the shocks and strains of time? In answer to this question I thought of the spires pointing heavenward all over this land that tell of the worship of God. By whatever name called they stand for religious liberty, and testify to the first source of our nation's strength.

At nine o'clock this morning bells began to ring where the river St. Croix divides our country from the Queen's dominion, and rang on across all New England, across New York, Ohio, Indiana, Illinois, and on across the Rockies to the Pacific Ocean, and from the Lakes to the Gulf. As these bells rang, the millions of children of all classes in this land, the children of the rich and the poor, the home born and foreign born of all colors came together at this call of the states, for it was the states that rang those bells, and side by side, except down south where the colored child has his own schools, these children are now sitting in places the state has prepared and are receiving from your profession, teachers, an education for American citizenship.

Our free public schools are the second

source of our republic's strength. The third is a free public press. These three, the church, the school, and the press, are the constructive influences for good in our land which are the hope of our future.

We have another institution which is purely destructive of that character on which our national life depends. It is planted not far from the church or the school, outnumbering the churches four to one, rivaling the schools, and even subsidizing the press. It is the American saloon. Its product, alcohol, sears the conscience, dulls and degrades mental and physical ability, and transforms the kingly achieving citizen into the driveling slave of appetite.

To our protest against this destructive force statesmen replied, "We admit the evil and its menace, but what can we do? This is a government of public opinion. We have no power with which we can prohibit what a majority of the voters want to drink."

"Yes," we replied, "we know that law waits on public opinion, but you can provide for the education of a right public opinion on this subject. The people think a little alcohol is harmless, while in truth a little, far from being harmless, has the power to create an uncontrollable and destructive desire for more, and drunkenness follows.

"Enact laws that will require the nature and effects of alcoholic drinks and other narcotics to be taught, in connection with physiology and hygiene, as a regular branch of study for all pupils in all public schools, and coming generations will be too wise to drink and smoke as their fathers have done."

"Capital idea!" these statesmen said. "We can do that and we will." And they began in 1882 in Vermont, and to-day, after a lapse of eighteen years, the public school study of physiology and hygiene, including the nature and effects of alcoholic drinks and other narcotics, is compulsory in every state in the Union but two, Utah and Georgia, and they are coming.

What is the effect of this study? A friend from Kentucky tells me that whiskey, not beer, is the tippie in the South. The northern states are the beer-drinking states. Our strongest temperance education laws have been longest in force in some of these northern states. What effect has this form of education had on the consumption of beer?

I hold in my hand the report of the last brewers' congress. The opening address of the president of that organization is a jeremiad of lamentation over the decline in the beer trade which he says is "staggering to its own ruin." The brewers report a decrease, for the last fiscal year reported at that congress, of nearly 1,000,000 barrels of beer, in the face of the fact that they sent more than 100,000 more barrels than ever before of this liquor to

our new possessions, with which to civilize the child races which have newly come to our care.

Granting that the Spanish War tax of which the brewers complain has hurt this trade, nevertheless, indications point to the fact that the people are drinking less. Railroads, banks, and other reputable business of to-day refuse employment to drinkers of any type. All this and other like changes in popular habits have come about since we began twenty years ago to talk and teach scientific temperance.

But are we teaching the truth?

Professor Atwater says we are not. He says his experiments proved that alcohol is oxidized in the body yielding energy. We reply this proves nothing in favor of alcohol unless he can show, as he can not, that it at the same time does no harm to the body. Other poisons are oxidized in the body yielding energy, injuring and ultimately killing, but this does not make them foods. Professor Atwater further says his experiments proved that alcohol "protects the material of the body from consumption as effectively as corresponding amounts of sugar, fat, and starch."

Some of the most distinguished scientists in this country say without qualification that Professor Atwater's own figures in his Bulletin 69 do not prove what he claims; but instead show that alcohol acted more like a protoplasmic poison than a food upon the man he experimented on in his famous calorimeter.*

Over against his claim in "Harper's Monthly" for a food value for alcohol because it protects fat, we set the statement of Professor Max Kassowitz, one of the great physiologists of this age, who says:

"It is inappropriate to speak of a protection of fat by alcohol, and there is still less sense in regarding a substance a food because the protoplasm destroyed by it is no longer capable of participating in the vital processes and the oxidation intimately connected with the same.

"Our final sentence against alcohol is pronounced. For the animal and human organism it is not both a food and a poison, but a poison only."

This is but one of many like eminent testimonies. Therefore, without the least fear of contradiction, we assert that Professor Atwater has not produced one particle of evidence which will stand the searchlight of modern science to show that we are in error in teaching the boys and girls of America that alcohol is not a food but a poison, according to standard definitions of these terms.

And yet, in the face of unanswerable testimony, and the fact that the leading medical journals of the country have not supported his claim, Professor Atwater with an air of apparent candor repeated before the last annual meeting

of national superintendents, in Chicago, the often told and as often contradicted story of what his experiments had proved in support of his usual criticisms of the indorsed text-books, the target he is always firing at.

Then followed the adoption of this resolution:

"Resolved, That the chair appoint a committee of seven, whose duty it shall be to report upon the teaching of physiology in the schools, especially with regard to the condition and progress of scientific inquiry as to the action of alcohol upon the human system, and to recommend what action, if any, by this department is justified by the results of these inquiries,"

and the appointment of the proposed committee.

This action of the national body of school superintendents makes it the duty of every man and woman in this country who is charged in any way with public school supervision to investigate before the next superintendents' meeting "the condition of scientific inquiry as to the action of alcohol upon the human system," in order that they may act intelligently when this question shall come up for consideration.

Great crises in our national history have always shown that God knew they were coming and had the remedy ready before we hardly realized the peril. The story of "the cheese box on a raft," as the newspapers called the Monitor that sunk the Merrimac and saved Washington in the days of the Civil War, is only one of many like instances which we are so used to that it is a saying of our people, not irreverent I hope, that "God takes care of children, fools and the United States." So you will not be surprised to learn that while it has become your duty to study this question, scientists in our own country and in the laboratories of Europe are now as never before investigating the alcohol question. And there is no Atwaterism in their verdict.

A long list of this work being done abroad was sent me just before I left home for this western trip. These papers are now being put into English, and their digest in leaflet form will be sent you by that ubiquitous society, the Woman's Christian Temperance Union.

Truth can not be muzzled in these days when even the lightning carries its messages.

Will Uncle Sam have a glorious old age?

Not unless we can overthrow the dominion of alcohol, for it is a character poison. What are the chances for that overthrow? Have you seen the report of the last census? I cut this copy which I hold in my hand from the Philadelphia Ledger yesterday morning on the train. It claims to be from the first official report given to the public. From it I learn that the total population of our country is over 76,000,000.

* See scientific testimony in "An Appeal to Truth"

That is a great crowd to bring up to concert pitch on the alcohol question.

How far are we doing it?

New York, the most populous of our states, with 7,000,000 and more people, requires that every pupil in all its public schools shall have at least three lessons a week for ten weeks of each school year in physiology and hygiene, including the nature and effects of alcoholic drinks and other narcotics. These lessons must be oral in the primary, while books must be used that give one-fifth their space to temperance matter in intermediate and grammar grades, and twenty pages for the high school. All pupils must pass the same tests for promotion in this as in other studies. Did not some people grumble over that? Oh, yes. In the days when the North said, "Only one flag shall float over this land," this same class of folks grumbled. There are always grumblers enough to make a noise against every forward movement. They simply represent the protest of belated souls against progress.

Pennsylvania with its 6,000,000 and more people is the next most densely populated state. Since 1885 there has been in force in that state a strong temperance education law which is doing such good work for its people that two eminent physicians of Philadelphia, in an article published recently in the *Journal of the American Medical Association*, said:

"A most encouraging sign of our advance in civilization at the close of the century is the increased interest taken by the people in the subject of general sanitation." After granting to local boards of health the recognition their due, these gentlemen say of "the causes of this gratifying public interest in dietetics:

"A large share in our opinion . . . may with justice be attributed to the systematic study of physiology and hygiene, including the scientific temperance instruction, which has for some years been a part of the regular course of study for all pupils in our public schools."

Illinois with its more than 4,800,000 people ranks as the third state in population. Every child in its public schools must have four lessons

per week for ten weeks of every school year in physiology and hygiene, including special instruction as to the nature and effect of alcoholic drinks and other narcotics. The teaching is oral in the primaries with graded text-book instruction for pupils in other years. Illinois requires the same relative amount of temperance matter in these graded text-books, and the same examinations or tests in this study for pupils' promotion that New York does.

When that law went into force, one of the Chicago dailies, *The Times-Herald*, I think, said, "This temperance education law in twenty years will make Illinois one of the strongest temperance states in the Union."

Ohio with more than 4,100,000 people is the fourth of our states in population. What is being done here in this education for a sober future? In 1888, the legislature of Ohio in taking action on this subject seemed to forget that the invention of printing, making the printed page an essential method in education, introduced a new era into human history; for they enacted that no text-books were needed in the pursuit of this study. How much intelligent sentiment on the alcohol question has resulted in Ohio from that law I leave you to tell.

With the further legislation on this topic enacted this year I am informed you are not pleased because the penalty

of this new statute includes you. But you will admit, teachers, that in a matter so grave as this, in which individual and national life are at stake, there should be a penalty which should fall upon the parties responsible for the enforcement of this law.

Experience long ago showed us that where these laws are not enforced, it is almost invariably the fault of local boards of education. If they, in making out the curriculum fill the time of pupils and teacher actually full with the "Three R's" and other topics, leaving no place in the course of study for this subject, and furnish no text-books as for other branches, and make no demand for tests for scholars' promotion, they are to blame if the study is neglected, and upon them and not on the teachers the penalty should fall. To fine a teacher for



"Echoes of the angels' song,
And holy gladness, calm and strong,
And sweet heart carols, flowing free!"

failure to teach this study, if the local board of education has made no provision for it, is hardly fair. If such provision has been made and the teacher then refuses, it would not be unjust for her to be fined.

Allow me to suggest: Go to your local boards of education, call attention to this law, and show that the penalty applies to them also. Tell them you do not ask that this study be pursued every school day of the year. That would more than cover the subject. But ask them—

First, to order for your schools what Illinois requires for this study, four lessons per week for ten weeks of each year for every pupil.

Second, that these lessons shall be oral for primary children with graded indorsed text-books furnished as one means of information for all pupils above the primary, closing with the first year of the high school.

This number of lessons, one hundred and twenty given orally during the three years in the primary, and two hundred and forty with well-graded text-books in the six years above the primary, will cover the subject without unduly crowding other branches, and keep it with a fresh and progressive interest before the child's mind during the habit-forming period of his life.

Less than one-fifth of all this instruction in the indorsed books, including the high school book, refers to alcohol and other narcotics. All the rest is general physiology and hygiene.

That this is not asking for a disproportionate amount of time for these vital topics is shown by the fact that from six hundred to nine hundred lessons in geography are often given in the same time. It is certainly of as much practical value to the child to have a knowledge of the laws of the health of the body he must live in as long as he stays in this world, including the effects of cigarettes, beer, and kindred drinks upon that body, as for him to possess minute geographical information of the uttermost parts of the earth.

Get your school boards to adopt these suggestions, put your best heart, brain, and teaching power into this subject and what will happen?

You will save the children in your schools for an intelligent sobriety as contrasted with the horrors of alcoholism, and you will save Ohio to the position she should fill in this struggle against the worst foe of our republic.

By no combination of these figures showing the population of our different states, and considering what they are doing for the temperance education of the coming generations, can we leave Ohio out without serious loss to the whole country, to say nothing of your loss. And you do not want to be left out. You care for the future of the children of this state and for that of our nation. You can not help caring, for you are "our folks." Either you or your forebears came from New England. I doubt not

there are to-day more sons and daughters of the Puritans in Ohio than in Massachusetts. Our children have gone West and foreigners have come to take their places. We are trying to make a good American citizen of the foreigner. But the closest of all ties, that of blood, binds Ohio to us of the East. Your fathers and ours fought side by side for the independence of this country. Ohio stood shoulder to shoulder with Massachusetts for the preservation of the Union in the Civil War, and in the Spanish War you were not lacking. The nation is now asking Ohio's teachers to enlist recruits in this educational battle against our republic's greatest foe, and from your record in the past we can not believe you will not respond. We rejoice in your growth and greatness as the mother of presidents, a growth that will be greater as time goes on and you meet its demands.

Our country to-day is honoring the heroism that climbed San Juan Hill leading unprotected infantry in the face of the fire of intrenched artillery, and tore down the Spanish flag representative of tyranny, that the stars and stripes, the emblem of liberty, might float in its place. This nation has its pæans of grateful recognition waiting for the heroes in your profession, who will lead the feet of the childhood of this nation up those lofty heights of noble living in which alcohol and other narcotics have no part.

Because the teachers of this country as a whole are a God-fearing, child-loving body of men and women, I believe they, recognizing in the call to this study an opportunity which is God's command, will meet its demands. The law generally requires school boards to do the same, and we must tighten the laws that do not. Therefore, to the question, Will Uncle Sam have a glorious old age? I foresee that he will have something better. As the clock of the universe ticking in millenniums strikes off the last of the first twenty-five years of the twentieth century there will be no more saloons than there are slave blocks now in our land, because the children now in the schools will then be in power. And as time passes and the blood of our people is free from the taint of alcohol and kindred narcotics they will rise to the manhood and womanhood God intended for them, and the rolling years will bring to Uncle Sam a maturity which will grow more and more glorious as his family increases to hundreds of millions of men and women who are capable of a lofty self-government.

From an address delivered in Columbus, Ohio, by Mrs. Mary H. Hunt, Nov. 3, 1900, before the Ohio State Teachers' Association.

We regret that the fourth article in the series, "Nineteenth Century Notes," as well as the high school lesson, must be omitted this month from lack of space.

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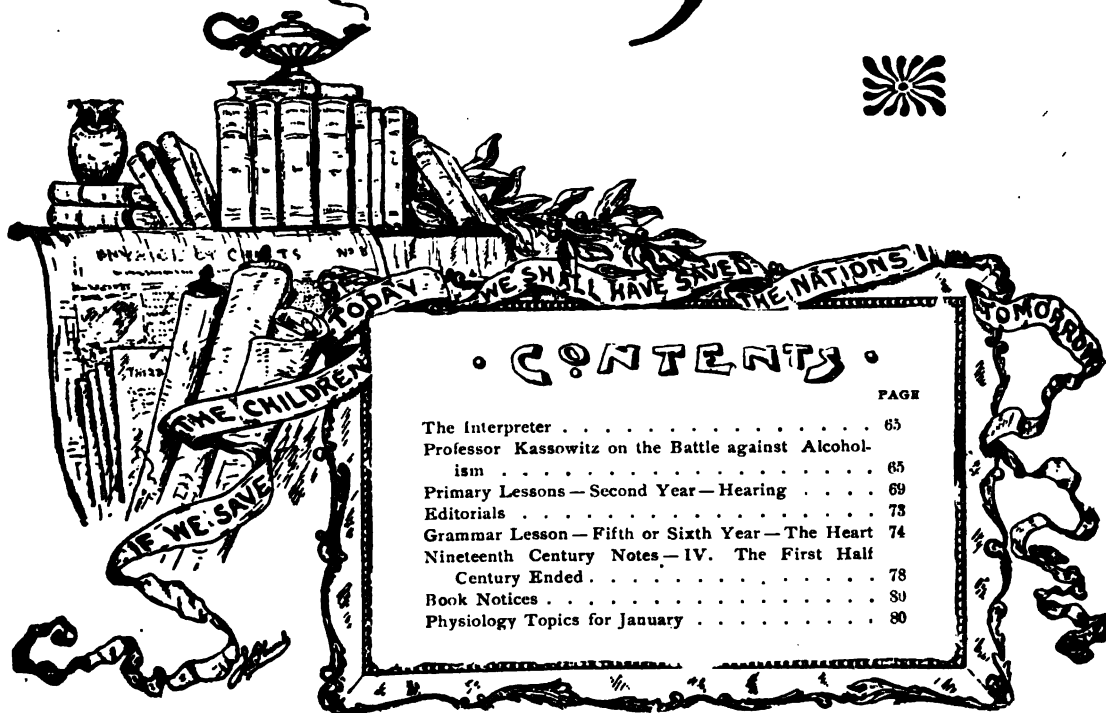
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School Physiology Journal

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BOSTON, JANUARY, 1901.

No. 5.

THE INTERPRETER

The New Year on the threshold stands
With the King's message in his hands ;
For so a thousand came before,
And a like royal message bore.
And who, save Love, deserves to read
This Gospel, if the world give heed ?
For only she, by day and night,
May tell Time's mystery aright.
"I am the Law fulfilled," she saith,
"Come peace or war, come life or death."
She doth upbuild where others mar,
And Hate and Fear false prophets are.
Through all the earnest years that were,
Love hath been life's interpreter ;
Of all the golden days to be.
Love holds the key, Love holds the key.

—FRANK WALCOTT HUTT.

PROFESSOR KASSOWITZ ON THE BATTLE AGAINST ALCOHOLISM

The well known Vienna Clinician, Professor Max Kassowitz, M.D., on several occasions recently has taken a position absolutely opposed to alcohol. In a lecture given before the Vienna Physiological Club, in November, 1898, and published in the *Wiener med. Wochenschrift* (1898 Nr. 48-51) on "Die Einheit der Lebenserscheinungen" ("The Unity of Life-Phenomena"), he said in conclusion :

"These changed conceptions of life processes ... would not only be of theoretical significance but would also become deeply impressed upon practical life. For how significant it would be to have not only the scientist but all thinking men clearly determine that alcohol can never be nourishing but invariably poisonous, I need not here amplify. And if I should have helped to bring about the overthrow of the dogmas concerning the nourishing and strengthening character of alcohol, which I must look upon as one of the fatal errors of science, I should find therein a sufficient reward for my trouble."

Since then Professor Kassowitz has repeatedly brought up the alcohol question before a large public, once at a meeting of the Austrian Society against Drunkenness and also in an article in Harden's "Zukunft" and in the Vienna "Times." From an article appearing in the last named weekly, (Nr. 288, Bd. xxiii) entitled "Is Alcohol a Food or a Poison?" we take the following extract :

"That out of the rapid consumption of alco-

hol have grown the most serious hygienic, moral, economic, and social injuries, that alcohol undermines the health of individuals and generations, that it destroys family life, increases pauperism and fills the jails and insane asylums, is so evident and is by scientific investigation so surely established that no difference of opinion concerning it is held among earnest people."

In the combat against alcoholism the attack can now be made from two sides ; from the side of alcohol or from the side of man. The production and sale of fermented drinks can be suppressed or prohibited through direct legal enactment. That is only little understood by us at present. The second way offers a better prospect, the combat against alcoholism by men. Here again we can work in two ways, through punishment or through instruction. "But at best we can punish only the drunkard, never the drinkers who exceed the former by many thousands ; and whether either threatening or the actual execution of the punishment will help much may be justly questioned. But one thing is certain, that no liquor laws will hinder any one from making himself sick and miserable by drinking large quantities of wine, beer or spirits, from diminishing his physical and mental working ability, from robbing his family prematurely of their supporter, and of inflicting upon his children the stigma of such an heredity. Here punishment or threatening can never be instituted with any prospect of result.

"For instruction, various ways, again, stand open. Parents can and should instruct their children, teachers their pupils, clergymen their followers, authors their readers. But how little is actually being done in this respect need not be dwelt upon. In the most favorable cases the warning is nearly always against that drinking only which leads to drunkenness and the excess and misdemeanors connected therewith, not against drinking habits and customs, although the amount of damage caused by these, on account of their wide prevalence, is incomparably greater than that which alcohol by itself causes, at least in this country which produces notorious individual drinkers.

"This indifference to the alcoholism that does not exactly lead to complete drunkenness must have somewhere sufficient reason, and since it is not due to any lack of will on the part of those from whom we should expect such instruction, we must look for the reason else-

where, and we find it really in the generally prevailing ignorance concerning the danger to the physical and spiritual welfare from the habitual use of spirituous drinks, or the use of very large quantities such as are consumed upon fair and festival occasions.

"These dangers, at present at least, are known chiefly to physicians, because they learn of their existence from their own patients, or their attention is called to them by more experienced physicians through voice or pen. The young physician not only learns at the clinic that alcohol is the cause of a whole series of very grave diseases, but he notices also that all diseases coming from other causes are more dangerous in the case of habitual drinkers than with others.

"In his later practice, he has opportunity to see how men who are known as 'jolly company,' who are accustomed to take their early glass and to boast that no one is able to drink them 'under the table,' either die suddenly of heart failure in the bloom of their youth, or succumb to influenza, or come to a miserable death from the results of heart weakness or kidney disease. As an insurance physician, he knows that his company rejects the moderate drinker as too great a risk, and that the average longevity of the abstainer exceeds that of the moderate drinker by many years. All this, and much more which illustrates vividly the harmfulness and danger of prolonged use of alcohol is known to a nicety by every medical man of experience, and one ought therefore to expect that physicians at least would take pains to let their patients and all those with whom they come in contact share in this highly important knowledge.

"But not only does this seldom happen, but there is no doubt that physicians even contribute to making permanent the false views concerning the value and effects of alcohol which are so generally disseminated; and that they themselves often directly recommend, not only for a few hours or days but for longer periods, the use of strong (alcohol-rich) wines, of strong beers, and even of brandy; and that manufacturers and sellers make use of their commendatory testimony in newspaper announcements. Thus upon one side we have the undeniable fact that alcohol acts as a poison, that very large doses of the poison can cause death within a few hours, that the continued use of a not immoderately large quantity certainly conceals in itself a true Pandora's box of dangerous evil; and upon the other side the recommendation of the same poisonous and destructive substances as strengthening and health invigorating agents which a greater part of the physicians would not for all the world spare from their medicine stores. Therein lies an inconsistency so notable that it is well worth while to follow

up the origin of such a fatal error, and only thus can these inconsistencies be overthrown."

Kassowitz finds the explanation in this, that the teaching which considers alcohol a food because it is burned in the organism has still held to this formerly accepted dogma in spite of many newer investigations which have shown its indefensibility. But Kassowitz thinks that theory and empiricism accord in that the two contradictory characteristics of a food material and of a poison can never be combined in one and the same substance, because the poisonous qualities of a chemical substance consist in the fact that it destroys parts of the living organism, while the nourishing property of a food rests upon the fact that it enters into the construction of the living substance and contributes to the reconstruction of its waste particles through the vital functions.

"It is impossible for one and the same material to perform both these directly opposing functions, and it is absolutely determined that alcohol possesses in a conspicuous measure the power to destroy and to kill living parts; thus it can not possibly be employed at the same time to preserve living parts."

The assumption which ascribes food properties to alcohol appears indeed to Kassowitz, upon the ground of this simple theoretical consideration, as a scientific error, the removal of which is the most important preliminary condition to an effectual battle against alcoholism.

But in addition to this theoretical consideration comes now the physiological experiment. A whole series of substances has long been known which, without doubt, like glycerine, lactic acid, butyric acid, are burned in the animal body, but which nevertheless are not able, even to the smallest extent, to take the place of necessary food in the preservation of the animal body; thus, numerous metabolism experiments, particularly those of Miura set on foot by Professor von Noorden, have indicated that alcohol also belongs to this group, that is, that it is a fuel without nourishing power. Miura found that the addition of alcohol to the food before taken, not only causes no diminution of the nitrogen output, and does not prevent the loss of body material (as is regularly the case with the addition of sugar or fat), but that, on the other hand, the nitrogen output following this addition of alcohol may become yet greater than it had been without this addition. This augmentation of nitrogen output as the indication of increased protoplasm destruction shows us *a posteriori*, therefore, what we indeed must definitely expect from the beginning, that alcohol as an undoubtedly poisonous combination not only can not take part in the building up of protoplasm, but that, like all other irritants, it always destroys parts of the living substance. Far from strengthening the weakened organism,

this substance, by continued use, is always able only to weaken and injure it, while it reduces its amount of living and working material. At the most, the mildest verdict upon these widely disseminated irritants may be thus formulated, that the injury which the poisonous effect of alcohol in quite small doses will cause is possibly so small that the healthy organism can adjust itself to it. In the present state of our knowledge we can not speak of it as a benefit, while overstepping a very small limit will surely change the continuance of health in one way or another. But under no circumstances and in no form should alcohol be permitted to children, because in not excessively large amounts it is often sufficient to cause serious consequences, for instance, enormous liver swelling, which has been observed by myself and others.*

"Thus and only thus runs the real truth concerning alcohol

which is established at the same time by theoretical, empirical and experimental methods, and only by the widest possible dissemination of these truths, according to my opinion, is a checking of alcoholism to be expected. But this widespread dissemination appears to me to be possible only in the following manner.

The beginning must be made by the teachers

of the coming medical generation, and without doubt in this manner, — that on every suitable occasion they state to their pupils in the most impressive manner, and in keeping with the importance of the topic, the results of sober, prejudiced inquiry here outlined, and that they exert themselves to impress with earnestness upon their hearers their well-grounded convictions. Those who become trained physicians in this sense will then surely not neglect their sick, and what is still more important, they will use all their influence to instruct all accessible people in health concerning the real facts of these things, and instead of recom-

mending alcoholic drinks for strengthening, they will again and again raise a warning voice and exert themselves to demonstrate in an effective manner the dangers always associated with the continued use of larger quantities of alcohol. In these ways, then, the teachers, preachers, and all those who from their position and calling in life are able, will also instruct others in a knowledge of the truth, and the latter, in turn, will take pains to extend it as much as possible in every way. If once we reach the point where every accountable person is thoroughly instructed concerning the fact that alcohol possesses no nourishment, and that the habitual or repeated use of alcoholic drinks in any considerable doses is always associated only with detriment to the health, then will the alcoholic be, perhaps not yet extinct, but much more seldom seen; and those who for all this,

still continue to flood the brain, heart, liver, and kidneys with this destructive substance will not be able to shield themselves with ignorance, as is done to-day by most men, but will know to what dangers they are exposing themselves."

We have every reason to be satisfied with this decided stand taken by Professor Kassowitz. He puts his hope for the



"Every pine and fir and hemlock wore ermine too dear for an earl;
And the poorest twig on the elm tree was ridged inch-deep with pearl."

battle against alcoholism upon the coming generation of physicians and demands, certainly with good reason, that they be equipped by their teachers with the necessary knowledge of this subject. But in our opinion this theoretical teaching about the physiological effect of alcohol is absolutely insufficient to reach this end. As far as instruction is concerned, a true enlightenment about the whole pathology of alcohol is at least as important as the knowledge of the physiological effects. But in the last instance it is not only a matter of theoretical teaching but of action upon the will power, therefore less a problem of instruction than of education. The physician should be educated to become a combatant of alcoholism. For this he needs,

* In three cases I have observed in children who were accustomed to drink daily wine and beer in not very large quantities, on the occasion of the outbreak of an acute disease (measles, influenza) the absolute form of alcohol insanity.

besides the necessary knowledge, moral courage, inspiration, a sense of duty, and immovable persistence. How can a teacher who is himself a slave to drinking customs awaken these qualifications in his pupils? How can he implant in his pupil the conviction that the subject is a sacred one when he himself is not willing to sacrifice a social glass? Will he find the necessary independence and courage to put his whole being into his words if he feels himself not free? And what influence can he exercise upon his pupils if with his words he brands abstinence as a dangerous poison but in his life acknowledges it as a desirable food? As in all education, so here, personal example is the most valuable and determining thing. The only admissible consequence from the postulate of abstinence is the demand for total abstinence on the part of teachers of the coming generation of physicians.

But experience has already decided this long ago. In the Swiss universities the number of alcoholic opposers among the students has reached far beyond a hundred, the academic abstinence society "Libertas" counts dozens of medical men in its ranks, and every year a number of abstinent physicians step from the universities into practical life to take up with energy in their profession the battle against alcoholism. The merit of this belongs absolutely to the university professors who have set before their pupils the personal example of total abstinence, above all to von Bunge and Dr. Forel. And still these teachers represent such branches as have as a rule little influence upon the young medical student, such as physiological chemistry, physiology, and psychiatry. It is wholly inadvisable how much good could be done if the most influential professors of medicine who have shown themselves partly indifferent and partly negligent would unite themselves with these physiologists and psychiatrists. A half dozen of them would be sufficient as officers to lead a whole army of young medical opponents to victory. May this decisive stand taken by Forel, who has sharpened the conscience and bring an end to the shameful condition in which those who might do most do least.—DR. HERMANN BUNGE, Basel, Switzerland.

"Your son," said the school teacher, "is very backward in his studies."

"That's funny," mused the father. "At home, in conversation with me, he seems to know it all." —[Educational Independent.

"I hear you, by the new year, ring out your anger

And promises so sweet;
I see the coming months that follow after,
Arm'd, clad, with waltzing feet."

THE NEW YEAR

"O'er the mountains wild comes a little child,
And all the untrodden ways
Are blooming bright 'neath his steps of light,
And the valleys ring with his praise,
And the morning glints on his brow, and tints
His cheek with its rosy rays.

"The song he sings and the joy he brings
Are wonderful, sweet and rare,
And the future glows like a fragrant rose
'Neath the wand that he waves in air;
And with kisses sweet and with smiles we greet
The beautiful glad New Year.

"So cover the head of the Old Year, dead,
With a cold cold shroud of snow;
Life is sweet, but time is fleet,
And the years must come and go—
The beautiful years, with their smiles and tears,
The years that we all love so!

"Kisses and tears for its joys and its cares,
The year whose steps have passed
Into silence sweet, where no fall of feet
Is heard in that far dim past.
To the old—his due; but we love the new—
The sweetest rose is the last."

WAS HE RIGHT

Teacher — "Spell wrong." Johnny —
"R-o-n-g." Teacher—"You know that isn't
right." Johnny—"Course it isn't. You told
me to spell wrong."—[Ex.

THE AFTERWARD

The kiss of dawn is on the sea:
The early matin singers rise,
And send their songs up to the skies,
Reaching the heights where I would be.
My day is like the sea. Its face
Is tranquil as a gray-toned lake—
Quiet, eventless, soft with grace.
I know ere night the storms may break,
Yet trustfully I sail away
Toward the East, to meet my day,
And leave the Afterward with God.

—MARIANNE FARNINGHAM.

Donald had been corrected for some slight misconduct, and before the clouds had entirely rolled away he was asking to be given some special pleasure.

"I can not say yet," said mamma. "I'll see how you behave in the meantime."

With a smile that was almost angelic, Donald responded, "Mamma, dear, there isn't going to be any more mean time; I'm going to be good all the time now."—[Youth's Companion.



HEARING

EDUCATION is of value only as it translates itself into action. The trained man must do more than learn to see and hear and use his other senses effectively; he must know how to act on the moment and with unerring judgment from the impressions received.

In the schoolroom it is often easier to repeat directions than to insist upon attention and prompt obedience, but it is ease purchased at the expense of the child's best good. He grows more and more careless until the habit of inattention is fixed. When he gets out into the business world he finds there is no place for those who can not measure up to an emergency. They are shoved aside and must fall to the rear.

There are two great armies in the world, the workers and the idlers, and our pupils must soon join the ranks of one or the other. If we are carving a statue the work can be done tomorrow as well as to-day, but the fashioning of character can not wait. It goes on in spite of us. If we would modify it we must act at once.

A practical education depends first of all upon sense training. We must teach the child the right use of his senses, we must help him to train them to ever better work, and we must show the vital connection between knowing what ought to be done and doing it.

Outline of Topics	{	The organ of hearing
		Parts of the ear
		Hearing in animals
		Training the sense of hearing
		Care of the ears

THE ORGAN OF HEARING

Bring into class a picture of Pekin or any walled city. Ask what the gates are for; then why houses are built with windows. Show that our bodies also have doors and windows, seven of them, placed quite near together. Have the children point to each. Which are open all the time? Which can we open and shut as we like?

Have the class make drawings of each or

model them in clay. Who knows what these different openings are for? We shall try to find out to-day about two of them.

Strike a cord on the piano while the children sit with closed eyes. Then have them open their eyes and tell what you did. Ask how they knew.

How many of these doors do we have to hear with? Why are they placed one on each side of the head instead of close together? What is their shape?

PARTS OF THE EAR

Tell the children that when some one plays the piano in the room where we are, the sound comes to us through the air, although we can not see it. When it gets to our ears it has still a little journey to take before it reaches the part with which we hear. This part is called the brain. It is inside the head where it can not easily be hurt.

At this point in the lesson have ready a blackboard drawing in outline of the ear, showing the folds of cartilage, the outer passage, the drumhead, the middle and inner chambers, and the auditory nerve. It may be well to have two drawings, one of the same size as the human ear, the other enlarged to show the parts clearly. For primary pupils all intricate mechanism will, of course, be omitted, and only the simple parts here mentioned shown.

We have all read fairy stories telling about wonderful little people who go wherever they like without being seen. We know nowadays that there really are no such people, but after all we may think of the different sounds we hear as fairies, because they can do the same thing.

When any one strikes the piano we can imagine they are flying through the air to these little doors in our heads. Then they hurry along this passageway. Who can find it in the drawing? Point to it in your own ears. It doesn't take the sound fairies a great while to get to the end for it is only about so long. (Drawing on the board a line an inch in length.)

If we were small enough to travel with them along this tiny road we should have to stop at this point because a little wall is built right across the further end with no door or window.

But this doesn't stop sound fairies. They go right through to the middle room you see in the drawing, then through a little window to the inner room of all. Here they find many little roads leading up to the brain, of which they can take their choice. When they finally get there we can imagine that they tell the brain in fairy language what was played on the piano.

Think how much faster sound fairies can travel than we can. When somebody strikes a note on the piano, or a bell rings, they hurry so fast to tell us about it that we hear the sound

almost immediately. Let us try them now with something else.

Tap a desk with the ruler; walk across the room; speak; rustle paper. Then ask the children one by one to imagine they are sound fairies and to show how they would get to the brain from the point where these sounds start.

Show how that part of the outer ear which projects from the head is curved to catch as much sound as possible.

Teach the middle and inner parts of the ear to primary pupils only as paths by which sounds can get to the brain.

HEARING IN ANIMALS

Bring a pet cat into class and have the children examine its ears very gently. How are they different from ours? Call attention to their shape, the covering of hair, and their power of motion. Explain the reason for the downy hairs inside, that they help to keep the ear clean and are found in our own ears for the same purpose.

Show pictures of various animals. Let the children point out likenesses and differences between the ears of each. Help them to tell how the ears of a bull dog differ from those of a hound or terrier. Where on the head are a cow's ears placed? those of a horse?

Call attention to animals in which the ears hang down; to those in which they stand upright; to animals which have very small ears; to those with large ears. Find how many differently shaped ears the children have noticed. Describe the ear of a hen, showing the same if practicable.

Ask the children to find what animals can move their ears most freely; which have the most acute sense of hearing; what animals can hear more quickly than man; which ones are slower of hearing.

Explain why animals need the sense of hearing, and why, in many cases, theirs is so acute.

TRAINING THE SENSE OF HEARING

"See what a lovely peacock feather we've found," cried two bright-faced little girls. "Oh, grandma, may n't we put it in your cap?"

Grandma smilingly bent her head to be decorated, and four eager little hands were soon at work.

"That's just the place for it," chorused the children, when the feathers nodded gaily over grandma's white cap.

"A peacock feather got me into trouble once," said grandma. "Would you like to hear about it?"

The children were always ready for a story, so grandma began:

"When I was about your age, Ada, I used to be a very heedless girl. I could hear perfectly

well, but I seldom listened to what was said to me, or remembered it afterward.

"One day I was playing in the yard when mother came to the door.

"'I'm all out of yarn, Hester,' she said, 'and shall have to run over to Sister Sarah's for enough to finish your father's stockings. Stay right here till I come back and look after baby if he wakens.'"

"'Yes, mother,' I said, and off she went."

"Before long, neighbor Park's peacock came down the road. I ran to look at his lovely feathers and wished I had one to trim the hat I was making for my doll.

"'Perhaps one will drop out!' I thought, so I followed close behind, forgetting baby and everything else.

"For more than an hour I kept the peacock in sight, and at last a small feather really did fall. I picked up my prize and ran home.

"Just as I entered the gate there was a loud splash in the back room. I hurried in and found my dear little baby brother struggling in the large trough of water which stood there. He had wakened and was probably playing in the water when he lost his balance and fell in.

"If I had been five minutes later he would have been drowned. Mother found me kissing him and crying all in the same breath when she came home. She grew very white when I told her how careless and disobedient I had been.

"'Daughter,' she said at last, 'you must conquer this bad habit of inattention or it will conquer you.'

"Then she led me up to the large looking-glass in the parlor and bade me look at my two ears. 'They are little doors leading to your brain,' she told me.

"'Every time you hear what is said to you and try to do as you are told you are training your brain aright as well as your body. Every time you are careless and inattentive, you give your brain bad training. You have had a pretty sharp lesson to-day, but I shall not be sorry if it helps you to overcome a bad fault.'

"I never forgot mother's words," said grandma, "and I've told you this story to help you to pay attention when any one speaks to you, and to remember what is said.

"When my brother grew older mother taught us both little games to train our sense of hearing."

"Oh, grandma, won't you show us how to play them?" asked both children eagerly. "We are so tired of all our old games, and yours are always such fun."

"Very well," smiled grandma.

"Mother used to say the brain was like a person shut up in a dark room. It can never get out, and all it knows of what is going on outside it has to get through the little doors of sight, hearing, touch, smelling, taste, and feeling.

"To-day we'll play we are the two little hearing doors, and see how much news we can carry to the brain.

"Shut your eyes tight and tell me what I am doing."

"You are whistling!" cried Alice and Ada in the same breath. "Why, grandma, I didn't know you could whistle."

"Perhaps I can do some things you don't know about," said grandma, with a gay little laugh.

"Shut your eyes again! Now what am I doing?"

"Tapping the table."

"Tearing a piece of paper."

"Shaking your dress," guessed the children in turn.

"Right," said grandma. "Now listen and see who can hear the greater number of sounds outside the room."

"Some one is running the sewing-machine."

"Billy is barking."

"A carriage is passing."

"The wind blows."

"I hear a robin sing."

Almost every moment one or the other of the girls would hear a new sound, and nearly always it was recognized.

The new game was so fascinating it was hard to stop for supper, but grandma promised to play it again with them some time, so off they went.

"It's the very nicest game we ever played," the children declared; "and you are the best grandma to show us how."

"Bless their hearts!" said grandma. "I hope they'll grow up with quick ears and well trained brains, and I think they will."

Give your pupils similar drill, until they can recognize at once all familiar sounds. Teach them to tell the various songbirds by their notes; to know all common animals by the sounds they utter, and to distinguish between the different sounds of each: for instance, the cackle of the hen after laying, the call to her chickens for dinner, her alarm signal when danger approaches, and the low note of content.

Practice with the children until they recognize people they know as soon as they hear them speak. Read aloud short sentences or groups of figures for oral reproduction. Above all, train even the youngest pupils to hear directions when first given, and to carry them out immediately, remembering that much more is involved than the matter at issue, for as the child learns to use his senses and to act upon the impressions these convey, he is unconsciously forming the habits of a lifetime and determining his own future.

CARE OF THE HEARING

A distinguished aurist sums up many of the most important rules for the care of the ear in the telling sentence, "let it alone."

Make it very clear to the little ones in your classes that in order to have good hearing and to keep it until late in life, they must guard the ears in every way.

Notice how they put on their hats and caps and do not allow these to be pushed down between the head and ears. Tell the children that such practice makes the ears stand out from the head in an awkward fashion, and also renders them liable to frostbite, chilblains, and injury.

Call attention to the harm done the lobe of the ear by wearing earrings. Many people think this practice is helpful to sore eyes, but there is no truth in the statement. Explain that unless the ear is

pierced by one who understands his business blood-poisoning is likely to follow, and that in all cases some deformity of the ears usually results. Show pictures of the earrings and noserings of savages, and tell the children that such barbarism may be expected in those who do not know better, but not in civilized people.

Show from the blackboard drawing the curves and narrowness of the ear-passage with its little hairs and wax-covered walls. Help your pupils to understand how all these provisions guard against the entrance of dust and insects.

Explain why the greatest care should be taken in washing the outer ear, and why no hard



"Grandma smilingly bent her head to be decorated."

substance should ever be put into the ear-passage. Make it clear that in health this tiny canal keeps itself clean and we have only to let it alone. Digging and poking in it only makes more wax collect and is likely to cause earache. Show them how to keep the outer ear clean by gently wiping its curved surface with a damp cloth. Explain that this is safer than allowing water to enter the ear. The ear should be gently dried in all such cases to prevent one from taking cold.

Tell the children to put bits of cotton lightly in the ears before going in bathing or swimming, to protect the delicate drumhead from the force of the water. The cotton should always be removed immediately after coming out of the water.

Impress upon their minds that if any substance accidentally gets into the ear a physician should be consulted, and that more harm may be done by unskilful poking in the ear than by the foreign substance itself.

Little children often suffer from earache. Tell them that the best remedy is usually dry heat. Going to bed with an old-fashioned nightcap on the head, and with a hot brick or hot water bottle placed against the aching ear will usually give relief.

Blow up a small paper bag and show how slight a blow will split it open. Point out from the drawing the tiny membrane stretched across the drumhead, and explain how this may be ruptured by a slight blow on the ear.

Show from a chart or drawing the tube which connects the ear with the throat and help the children to realize that smoking cigarettes or using tobacco in any form is likely to inflame both the throat and the lining of this tube.

Show how inflammation causes pain and swelling and is likely to injure the hearing. All drinks with alcohol in them may hurt the hearing in the same way. If the hearing is dulled and injured can we hope to have an active brain?

All children should have their hearing tested upon entering school and occasionally afterward, especially upon recovery from any disease. If any defect be found they should be given every advantage in seating, and a physician consulted as to the treatment necessary. Apparent dullness is often due entirely to inability to hear, and we owe it to ourselves, to our pupils, and to the community to make every effort to remove its cause.

AUTHORITATIVE QUOTATIONS

VALUE OF EARLY TRAINING

Children may be so trained as to respond in the right way to any duty in life. If they resolve to do a thing, the motor centres in their brain, trained by fitting early exercise, will be

better adapted for initiating the proper movements.—REUBEN POST HALLECK, M. A., Yale University.

ALCOHOL LESSENS SENSIBILITY

Very small doses of alcohol diminish the sensibility of hearing.—J. J. RIDGE, M. D.

ALCOHOL DULLS THE HEARING

Small doses of alcohol invariably dull the special senses. One can neither hear, see, nor feel so rapidly or accurately when a dose of alcohol has been taken.—[Medical Pioneer.

ALCOHOL AND TOBACCO INJURE THE HEARING

The use of tobacco often injures the sense of hearing. It affects the throat and Eustachian tubes, producing an inflammation which extends into the ear, seriously affecting the delicate parts. The use of alcohol frequently has a similar effect. If one would have a delicate sense of hearing he should not indulge in the use of either tobacco or alcohol.

—W. E. BALDWIN, M. D.

CIGARETTES LESSEN MENTAL ABILITY

We have never yet found a bright active pupil in any of our schools who used cigarettes. On the contrary, we have found many dull, listless, backward pupils whose memories were treacherous, and whose habits and natures were positively bad, who did use cigarettes, and I have come to believe that it is an utter impossibility for a boy to indulge in cigarette smoking to any great extent and at the same time succeed in study.—FRANK K. GRAVES, Prin. Graded Schools, So. Royalton, Vt.

SMOKING LEADS TO DISEASE OF THE EAR

Tobacco smoking, by inflaming the throat, often causes irritation about the openings of the Eustachian tubes from the ears, thus diminishing the circulation of air in the middle ear and making the part more subject to disease.—HENRY F. HEWES, M.D., Harvard University.

CIGARETTES DULL THE SENSES

I consider the cigarette the most dangerous form in which tobacco is used. It is the universal testimony of our teachers that those pupils who are in the habit of smoking cigarettes are invariably sluggish, languid, dull, unreliable mentally, often incapable of applying themselves to study, and without exception the poorest students in school.—E. B. NEELY, Supt. Public Schools, St. Joseph.

TOBACCO DEFILES THE USER

Touching the matter of person, tobacco is unclean; touching the matter of health, it weakens multitudes; touching the manner of morals, it belongs to the things of darkness.—B. L. WHITMAN, Ex-Pres. Colby University.

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"Gracious, white-robed, with smiling, mystic eyes,
Laden, the New Year stands;
Pure heaven, ere we may touch the smallest prize,
Strengthen and cleanse our hands!"

THE NEW CENTURY STUDY OF THE ALCOHOL QUESTION

THE century just closed witnessed a remarkable increase of alcoholic and other narcotic habits among the masses of the people. The spread of these habits and their disastrous results accompanied and kept pace with the rapid extension of communication and transportation until the swift following consequences led to active efforts to check their progress.

For nearly half a century heroic efforts were made to save the people from intemperance by the time-honored method of "moral suasion." Eloquence which the world has seldom equalled, and appealing from the moral standpoint to every shade of human emotion, was poured out from platforms everywhere. But the per capita consumption of alcohol steadily rose.

Twenty-five years ago a new method was inaugurated,—that of scientific investigation of the physiological results following the use of alcoholic drinks. Of this method Professor Kraepelin, Professor of Psychiatry in the University of Heidelberg, says: "In the struggle for and against alcohol the mightiest weapon will always be scientific investigation, which, untrammelled by rancour or the favor of partisanship, seeks to establish facts."

EFFICACY OF THE SCIENTIFIC METHOD

The scientific method which appeals to reason and self-protection has already begun to show results. In the United States, the nature and effects of alcoholic drinks and other narcotics, with other hygiene, is a compulsory study for all pupils in all public schools except in two states, Georgia and Utah. This study began fifteen years ago in the states where it was first introduced. The result is that in the United States the per capita consumption of alcoholic liquors, as shown by the Internal

Revenue Reports, reached its highest point in 1893, since when it has tended to decline.

In Europe, the scientific investigations carried on in the famous physiological laboratories have led to the formation of total abstinence societies whose centers are in the great universities, whence the truths about alcohol there revealed are being promulgated to the world.

The total abstinence society of Germany includes one hundred and fifty physicians. The famous universities of Switzerland, Basel and Zürich, are headquarters for active promulgation of the scientific reasons for total abstinence. In France, the Academy of Sciences carried on an extended series of physiological investigations which brought them to the conclusion that "alcohol is always a poison;" and in England the scientific method has gained for total abstinence some of the most prominent men in the medical profession.

FUTURE STUDY OF THE ALCOHOL QUESTION

The new century study of the alcohol question is to be pursued on a scientific basis by the whole people. To this all indications now point. The recent erroneous assertion thrust upon the people by Professor Atwater, that alcohol is a food, makes it necessary for the public in self-defense to understand exactly the grounds upon which that claim rests. The recent action taken by the National Association of School Superintendents appointing a committee "to report upon the teaching of physiology in the schools, especially with regard to the condition and progress of scientific inquiry as to the action of alcohol upon the system," binds them to a thorough study of the question.

A series of articles analyzing the condition of scientific inquiry concerning the alcohol question as it now stands is being issued by this department, under the title of "The Progress of Scientific Inquiry as to the Action of Alcohol on the Human System." It will take up as briefly as possible the points involved in the question, "Is moderate drinking harmful?" and will give the results of accredited original investigations, in the language of the investigators themselves as far as possible, together with the opinions of unbiased specialists. Full references to original literature will be given for the benefit of those who are able to pursue a more exhaustive study. This is not a subject so abstruse that the general public can not understand it. The people are quite competent to weigh all the arguments pro and con when put before them in plain terms that will not befog. These leaflets will be issued in rapid succession, and it is urged that all friends of total abstinence unite in giving them wide distribution. They may be obtained at the national department of scientific temperance instruction, 23 Trull Street, Boston, Mass., for thirty-five cents per hundred.



THE HEART

“WANTED! a boy.” At this season of the year such a sign is displayed in many windows, and even incompetents may be in demand for the time being. But only a few weeks will elapse before the weeding process begins and all undesirable candidates are again out of work.

What is the process of selection? Who are the boys that are always sure of employment? First of all, they are capable; quick of eye, strong of muscle, stout of heart. And to make themselves such they are willing to order their lives accordingly.

“If you mean to be a surgeon,” said a distinguished specialist to a bright-faced boy, “you will have to give up base-ball. It is spoiling your hands. Can you do it?”

The boy hesitated. He would rather play ball than eat his dinner.

“Yes, sir,” he said finally, “I would! I would give up anything for the sake of my best.”

This is the spirit which ensures success. It was base-ball against the boy’s chosen profession, and he wisely gave up the pleasure. With many lads the choice is between success and cigarettes. They think they can have both, but it is no more certain that base-ball unfits the hands for the delicate work of a surgeon, than that the poison of tobacco will prevent the growing boy from becoming the well developed man he might otherwise be.

School work in physiology should make this clear. It should show the physiological effects of all narcotics upon the different organs of the body so fully that every pupil will understand them and be able to choose intelligently for his future. The accompanying lesson on the heart is in line with these suggestions.

OUTLINE OF TOPICS

USES OF THE HEART

- To distribute food
- To distribute oxygen
- To remove impurities

STRUCTURE OF THE HEART

- What the heart is made of
- The arrangement of valves
- How its structure fits it for work

CARE OF THE HEART

- What it needs
- Effect of good care

DANGERS TO BE AVOIDED

- Overwork
- Poor food
- Bad air
- Narcotic poisons

USES OF THE HEART

Study of the circulation of the blood, including the work of the heart, should follow immediately that of food and digestion. Show the relation between these topics,—that the blood is the great channel of communication between all parts of the body. How is it like a great river system, or a network of railroads in this respect?

If near a large town or city take the class into the pumping station and show them the huge engine which keeps the water flowing through the entire system of pipes.

Study with them the water system of the town: finding where the water comes from; how it is distributed through the city; how the pumping engine works; the different sizes of pipe used in the mains, side streets, and houses. Then take up the drainage system; showing how the sewage is collected from the houses and streets and finally disposed of.

Bring out the fact that the health and growth of every part of the body depends on the nutriment it receives and the waste it gets rid of; just as the well being of a town depends on its food and water supply, and on the disposal of its sewage.

What has the heart to do with the nutrition of the body? Have the class find how the digested food gets to the heart, and why it is sent from there to the lungs before going to all parts of the body.

Study the uses of the two sides of the heart. Why is there no direct connection between them? Why is the left side thicker and stronger than the right?

Have the class find what other essential to life is sent over the body by the heart’s action. How does the necessary oxygen get to the heart?

Show what the heart has to do with the disposal of bodily waste. What becomes of the air which has lost oxygen in its passage through the body? How does it get from the heart to the lungs?

STRUCTURE OF THE HEART

Sum up the different kinds of work done by

the heart. Then study its structure. Show the carefully washed heart of a sheep and let the class decide what it is made of. Notice its shape, the relative thickness of its parts, the different chambers and valves. Have the class find which way the valves open and explain the reason.

In what ways is the structure of the heart adapted to the work it must do? What would be the effect on its work if it were made of bone instead of muscle? if it were made of fat?

Get reasons from the class why all parts of the heart are not of equal thickness; why the ventricles are larger than the auricles. Ask what prevents the blood from flowing backward, and keeps it always moving in one direction?

Explain how the heart is able to send all the blood, amounting to about one-thirteenth of the person's weight, to the lungs, and to the furthest extremities of the body. Have the class estimate the average number of times it does this in every twenty-four hours. How high would one have to lift a one-pound weight to equal the daily work of the heart? What would happen if the heart should stop beating? When does the heart get its rest if it must beat continually?

CARE OF THE HEART

One of the difficult parts of hygiene to make clear to young students is how they can help or hinder the work of organs which they never see.

In the case of the heart, let them find first how far they can control its beat. Can they stop it entirely? Can they hasten or retard its action?

Ask them to have some one count their pulse after lying quietly on a couch for five or ten minutes, taking, meanwhile, long, deep breaths. Then, immediately after a hard run of two or three minutes, have the pulse again counted. What is the difference in the number of beats? What has caused this difference?

Explain how the action of the heart depends on that of other parts of the body: how breathing faster or slower than usual affects it; how

exercising the arms or legs can make it beat faster; what effect an outdoor life would have upon its structure or work.

Help the class to find how the heart is nourished. Then consider with them what it needs in order to increase in size and strength as the person grows.

What is the effect on the muscles of the arm of nutritious food, constant exercise, sufficient rest? Why may a similar effect of such care be looked for in the case of the heart?

Show by a diagram the two sets of nerves controlling the heart. Why is each necessary? How would the loss of either affect the work of the heart, and through it the work of other

organs? Explain how the health and proper working of these important nerves depends on the food one eats, the exercise he takes, the early hours he keeps, and how these nerves, in turn, direct the movements of the heart.

DANGERS TO BE AVOIDED.

Have the class make a list of the bodily organs which depend on the heart for ability to do their own work. Let them find what the heart has to do with the brain and our power to think and study; with the muscles when one runs or lifts; with the growth of the bones; with digestion, respiration, and all functions of the body.

Find how the heart compares in strength with other muscles in order to be equal to the work it must do. If



Ready for a frolic in the snow.

it should be overworked or strained what parts of the body would suffer with it?

Bring out ways in which the heart may be overworked. This is most likely to occur in the case of delicate boys and girls who try to keep pace with their more robust companions. But even the strongest may over-estimate their powers and put too great a strain upon immature muscles. Teachers and parents should point out this danger and have constant supervision over young people, especially those just entering the age of adolescence.

Study the effect of improper food, that which is either poor in quality or badly cooked, upon

the action of the heart and its structure. How will a poorly nourished heart react upon the general health?

In pointing out an evil, always suggest a remedy. Have the class in this connection briefly review the subject of foods, and be able to suggest those which will tend to nourish and strengthen the heart.

The dangerous effect of narcotics upon the heart is so widespread and so insidious in its approach as to require special emphasis and explanation. The difficulty lies in the inability of the youth to connect the first innocent-looking cigarette or glass of beer with the disastrous effects which surely follow the habitual use of these narcotic poisons.

The class have found what are the requisites to a sound healthy heart. Take up now the effects of tobacco and alcoholic drinks upon this organ, and show how utterly opposed these are to its health and vigor.

Classify with them the statements of their text-books on this point. Then take up in a similar way the authoritative quotations in connection with this lesson. The following order may perhaps be observed:

What are the effects of alcoholic drinks upon the heart's structure? upon its work?

To what are these effects due? To what extent may each react upon other organs of the body? upon the health of the user?

What is fibroid degeneration of the heart? fatty degeneration? How do they differ? Why is each a disadvantage? How does each affect the heart?

What is the result when the walls of the heart are weakened? When the valves become diseased?

How does the habitual use of alcoholics lessen one's chances of recovery when attacked by pneumonia or some other severe disease?

Why is the drinker a poor risk in life insurance? Why is he likely to fail to meet an emergency?

How do we know that tobacco is a source of weakness? Why do people think they can work better with it? Why is its use prohibited in all important athletic contests?

What makes its use so injurious? How does it affect the heart's structure? the action of the heart?

How does its effect upon the heart interfere with growth? with the nervous system? with mental power? with the circulation? digestion? the muscular system? the development of the bones?

When the effects of these narcotics upon the heart, and through this organ upon the general health, have been fully discussed, take up in class their further influence upon one's business prospects, no matter in what direction these lie.

The world's demand is always for efficiency, and narcotics, even when used in so-called moderation, are unalterably opposed to one's best. No genius possesses powers of mind and body to throw away, and certainly people of moderate ability can not afford to risk their chance of success on degrading habits.

Make this so plain that every pupil grasps its meaning before body and soul are enslaved by narcotics, and the great majority will never become their victims.

AUTHORITATIVE QUOTATIONS

ALCOHOL CAUSES DISEASE OF THE HEART

There can be no doubt that alcohol, when taken into the system, may cause disorder of the heart's function and even disease of its tissue. A heart thus disordered in its action can not endure so much strain as a sound heart. It will give out more easily with exertion.

It is much less able to withstand the extra strain imposed upon it by the existence of some severe disease, as pneumonia, than the average heart.—HENRY F. HEWES, M.D., Harvard University.

ALCOHOL A CAUSE OF FIBROID DEGENERATION OF THE HEART

The use of alcoholic drinks often changes the structure of the walls of the heart, producing what is known as fibroid degeneration. In such cases masses of new fibrous tissue begin to be developed in and around the muscular fibers, and gradually to crowd them out. The walls of the heart become weakened and the heart's action is enfeebled. In the end, sudden death is likely to occur.—W. E. BALDWIN, M.D.

ALCOHOL CAUSES FATTY DEGENERATION OF THE HEART

Another and more frequent affection produced by alcohol is that known as fatty degeneration of the heart. Particles of fat are deposited in the heart substance, breaking up and crowding out the muscular fibers, and gradually changing its structure until it partially loses the power of contraction. If the use of alcohol is continued, the deposit of fatty particles may be increased until the heart loses its power and life ceases. Not only are the walls of the heart injuriously affected by the use of alcoholic drinks, but the valves also often become diseased.—W. E. BALDWIN, M.D.

TOBACCO A SOURCE OF WEAKNESS INSTEAD OF STRENGTH

It is the plea of the majority of tobacco users that they can work better with tobacco than without it, and that it gives them muscular strength. The first statement is no doubt true, for tobacco holds them in a sort of bondage

from which they can not break. The second statement is not true. No real endurance comes from tobacco. No tobacco user can obtain membership in the rowing crews of Oxford and Cambridge, where the best physical strength is desired.—W. H. RILEY, M.D.

NICOTINE PARALYZES THE HEART

Nicotine is one of the most powerful nerve poisons known, and destroys by attacking all the functions essential to life, beginning by paralyzing the heart. There is no substance known that can counteract its effect. We have the highest medical authority for stating that no one who smokes tobacco before the bodily powers are developed ever makes a strong vigorous man. It prevents development mentally, morally, and physically.

—CHAS. H. SHEPARD, M.D.

CIGARETTES PREVENT PROPER NUTRITION OF THE HEART

Cigarettes not only poison the blood temporarily, but permanently distribute the normal ratios of its component parts. The heart is the hardest worked organ in the body. If it has deteriorated blood to live on, it degenerates and weakens just as the other muscles of the body.—J. S. LEONHARDT, M.D., Specialist in Heart and Nervous Diseases.

CIGARETTES STOP DEVELOPMENT

The cigarette hinders the physical development of the boy so that he is dwarfed in body and strength and can not hope to excel.

—AMOS HIATT, Supt. Public Schools, East Side, Des Moines.

CIGARETTES WEAKEN THE HEART'S ACTION

Cigarette-smoking boys are smaller in stature than others. The heart becomes very weak and irregular in its beat and incapable of standing up to its work if any extra call be made upon its resources.—A. L. MONROE, M.D.

NICOTINE DEPRESSES AND POISONS THE HEART

Nicotine is one of the most powerful nerve poisons known. Its depressing action upon the heart is the noticeable and noteworthy symptom of nicotine poisoning. There is no substance

known that can counteract its effects. The frequent existence of what is known as "tobacco heart" in men whose health is in no other respect disturbed is due to this effect.

—["Science."

CIGARETTES A CAUSE OF "TOBACCO HEART"

The cigarette habit is increasing among boys and also among girls. It impairs nutrition, develops the "tobacco heart" and impairs the vigor of the circulation.—JAMES COLLINS, M.D., Philadelphia.

CIGARETTES A CAUSE OF NERVOUSNESS

Cigarette smoking causes nervousness and disease of the stomach and heart.

—C. W. BENSON, M.D., Baltimore.

CIGARETTES CAUSE HEART PALPITATION.

Irritable, palpitating heart, severe nervous irritability, with loss of mental capability, are some of the noticeable results of the cigarette habit.—WINSLOW ANDERSON, M. D., University of California.



Mid-winter in our new possessions.

The schoolrooms in which children spend a large part of the time during the most critical years of their lives should conform to the most approved sanitary knowledge of the age. Ample provision should be made for complete drainage, the best methods of heating

and lighting, and thorough ventilation should be employed. To insure a sufficient amount of oxygen all schoolrooms should be aired both morning and evening and at intervals during the daily sessions. This can be best accomplished by having frequent recesses, during which the doors and windows are thrown open and the rooms thoroughly ventilated.—E. STUVER, M.D., Ph.D.

Peopled and worn is the valley, lonely and chill the height;
But the peak that is nearer the stormcloud is nearer the stars of light.

—FRANCES R. HAVERGAL.

NINETEENTH CENTURY NOTES

IV. THE FIRST HALF CENTURY ENDED

"Slow are the steps of Freedom, but her feet
Turn never backward."

IN 1840, half a century and more had passed since France had lighted her beacon fires of liberty which, to conservative rulers and nations, had seemed ominous signals of change and ruin, but to the people, downtrodden and oppressed, signals of hope and deliverance. The half century had seen successive periods of progress and reaction, of hope and discouragement to the lovers of liberty, times when all the blessings humanity longed for had seemed almost within reach only to be succeeded by years when the cause appeared nearly lost.

The Talleyrands, the Metternichs, and the Louis Philippes of Europe had imagined that by resisting all change in government or society they could build up nations strong enough to stay the onward march of progress, but they failed to see under the restless commotions and revolutions of the people the workings of the resistless force of the eternal principles of liberty before which eventually their doctrines and work were to be swept away.

Much had been gained in that half century struggle for constitutional government and individual rights, much was still to be won, and the story of the fifth decade of the nineteenth century is the story of how the people made another effort to secure their rights.

"As, flake by flake, the beetling avalanches
Build up their imminent crags of noiseless snow,
Till some chance thrill the loosened ruin
Launches
And the blind havoc leaps unwarned below,
So grew and gathered through the silent years
The madness of a People, wrong by wrong."

As in the revolutions of 1789 and 1830, so in 1848 France threw the spark which caused the "whole powder magazine of European enthusiasm to explode simultaneously," but during the preceding years minor explosions had occurred which might have warned the conservative rulers of the dangerous path they were treading. Austria's influence unalterably set against reform was still all powerful among the German states, and held Italy in stern control. Discontent became rife among her own people, especially those of Hungary, as they realized that they were not sharing in the even slight gains in privileges which were gradually coming to neighboring states. Poland once more tried to shake off the rule of Russia. Ireland, under the fiery leadership of Daniel O'Connell, tried to break the bond holding but not uniting her to Great Britain, while her famine and distress compelled the repeal of England's famous corn laws. Canada's demands for greater constitutional liberty led to the union of the provinces in the "Dominion," with privileges granted by

the home government which have given her practical independence and secured her abiding loyalty to the mother country.

As for France, her people were very unhappy under the commonplace government of Louis Philippe. The hopes of wider popular liberties, so high at the accession of "the citizen-king," had not been realized. He had come into power chiefly by the aid of the capitalist class. The rapidly changing industrial and economic conditions owing to the inventions and improved means of transportation were causing great distress among the laboring people. Apparently resolved to have peace at any price, the government put down with a strong hand any expressions of discontent, but at the same time had no measures of reform to offer to relieve the rapidly increasing distress. It managed the elections of members to the National Assembly and so controlled their votes that the will of the people could not be expressed, much less carried out. "Never will I consent to a reform," said Louis Philippe. "Consider that definitely settled."

Nor was the government more fortunate in its foreign relations. By taking the part of Mehemet Ali, the Egyptian, in his demands upon Turkey, France managed to array against herself the combined opposition of all the other European powers, and had the humiliation of being obliged to withdraw her support of Mehemet Ali and of seeing her diplomacy utterly fail. The double dealing of the King in endeavoring to extend the influence of his family by the Spanish marriages cooled the friendship of England. Ashamed of their diplomacy, unable to secure reform at home, with misery and poverty constantly on the increase, the people of France were gradually working up to the explosive point which was reached on the anniversary of Washington's birthday, 1848, when the banquets planned by the advocates of reform and popular liberty were forbidden by the government. Then the people rose in anger, there was fighting in the streets, the ministers resigned, the soldiers fired on the mob which, vowing vengeance, marched to the palace, and the king, realizing all too late that reform was necessary, abdicated, fleeing from Paris in a common hackney coach and escaping to England under the unassuming name of Mr. William Smith.

Two days later the republic was declared. Its attempts to solve the pressing domestic problems by providing labor for every one in need speedily proved a failure. The constitution, adopted in spite of protests from the more far-seeing leaders, opened the way for direct conflict between president and assembly, while the return of the adroit Louis Napoleon from London where he had been serving as special policeman in the Chartist excitement, and his

election as president of France in December, 1848, were but the beginning of the end of the republic and of the return of the empire.

Other states and people welcomed the proclamations of the French Republic as a sign that the time had come when they too might successfully resist the policy of Metternich. "Revolution is like an epidemic," says Justin McCarthy. "It finds out the weak places in systems." Austria, the stronghold of continental conservatism, was soon ablaze with rebellion; the Italian states and cities taking advantage of her temporary weakness followed suit; Hungary demanded reform under the threat of revolution and got it.

"From the English Channel to the borders of Turkey," says Mr. Brooks, "the leaders of the people hurraed for constitutional liberty. Milan, Messina, Munich, Prague, Berlin, Vienna, Naples and the smaller German cities joined the ranks of reform; London itself was threatened by Chartist mobs; kings, princes, viceroys, ministers went scurrying for shelter; even the Pope of Rome fled from the Vatican; the Emperor of Austria abdicated, and the King of Prussia declared his willingness to grant reforms and unite all Germany into a nation."

Another writer says:

"To the people of Europe the supremacy of absolutism seemed to be overthrown and the era of constitutional government begun."

But human nature was not yet perfect nor above petty jealousies and inability to sink personal preferences in the greater cause of the common good. France's success was wrecked on the rock of mutual distrust between moderate and radical factions which made very attractive to those desiring peace the grandiloquent boast of Louis Napoleon that his name was "the symbol of order, nationality and glory," and encouraged the republic to entrust itself to his guidance, a trust soon to be betrayed.

Jealousies and disputes among the Hungarian leaders gave Austria time to gather up her energies and reconquer Hungary, and then, with

hands freed from complications at home, to turn her attention to the rebellious Italian states where lack of earnest and sincere co-operation made them once more an easy victim to Austria's power. Yet through their very defeat the people of Europe were slowly learning the necessity for united action, that the cause of individuals must be sunk in that of the nation, while the attention of rulers was once again forcibly called to the fact that the rights of the people could not be ignored.

But the world's energies were not at all spent in trying to secure economic and political reforms in the revolution of 1848. In America, the slavery question was becoming acute, already numbering among its martyrs the brave

Lovejoy who fell for the cause of free speech in behalf of the slave. For the sake of slavery the nation had been swept into an inglorious war with Mexico, ending in the defeat of Mexico and the addition of thousands of square miles of territory to American possessions. The gold of California discovered in 1848 was a magnet drawing thousands to the Pacific coast, thus extending American influence from shore to shore of the great continent. England, too, had been busy with measures of expansion, and by conquest had won and annexed northern India. Livingston, the brave missionary-explorer, was penetrating the heart of Africa and opening the way for the entrance of civilization into the "dark continent," while England, France and the United States had gained an entrance into China.



Samuel F. B. Morse, 1791—1872.

"What hath God wrought."

In the world of letters Carlyle and Emerson, Victor Hugo, Macaulay, Bancroft, Agassiz, Tennyson, Whittier, Lowell and Holmes were exerting a powerful influence in shaping thought and determining action. The spirit of invention awakened just before the beginning of the century had never again fallen asleep, and in this decade it gave to the world photography through Daguerre, the sewing-machine through Elias Howe, to suffering humanity the blessings of ether and chloroform through Morton and Waldie, through Rowland Hill the postage

stamp which became a tiny but mighty aid to the advance of intercommunication, and through Samuel F. B. Morse the first working telegraph which in time was to make neighbors of the remotest corners of the earth.

Thus letters, science, and invention were working with and contributing to political and economic forces, and out of the union was coming a grander conception of the relations of man to man, of nations to individuals, and of the high destinies of the human race.

SANCTIFIED WEALTH

Several years ago, when Mr. and Mrs. Stanford were traveling over the United States to secure ideas in starting The Leland Stanford Junior University they were made the butt for many jests, both good-humored and ill-humored. The wealth of the bluff old pioneer has created, largely under the later management and generous help of Mrs. Stanford, a beautiful university that is the pride of California. Sara K. Bolton, the well-known biographer, writes regarding the gifts of Mrs. Leland Stanford and her university work in the January "Delineator."

O wonderful world of white !
When trees are hung with lace,
And the rough winds chide,
And snowflakes hide
Each bleak unsheltered place ;
When birds and brooks are dumb—
What then ?
O, round we go to the green again.

—G. COOPER.

The family were at their devotions the other morning in the home of a West End clergyman. Master Six-year-old thought his papa's prayer was rather long when breakfast was waiting, and he undertook to beat a quiet retreat to the kitchen. Suddenly there was a crash, and a table, with its contents, fell to the floor, with the young deserter from the family altar beneath it. Prayers were interrupted temporarily, and when they were resumed the father prayed for the naughty boy. A short time later the lad's mamma found him in a closet upstairs. He was sobbing bitterly.

"Oh, mamma !" he exclaimed indignantly, "papa tells God of all the bad things I do, but never tells Him a word about the good that's in me."—[Cleveland Plain Dealer.

People breathing foul air, drinking polluted water, eating unsound food, and living in unhealthful homes from day to day and month to month, all unknowingly, are people with dulled perceptions ; and what blunts their sense of smell and sense of taste is not far to seek.—[Medical Pioneer.

BOOK NOTICE

PHYSICAL CULTURE, by B. F. Johnson Publishing Co., Richmond, Va. Cloth, 25 cents.

An admirable little volume for teachers and parents. The rules of hygiene which it presents are clear and easily followed. The directions for exercising each part of the body commend themselves at sight to those who wish to use some form of gymnastic and calisthenic movements in the home or schoolroom, but are unable to do so through lack of special training. The work is simple, practical, and fully outlined. An attractive feature, as well as a very helpful one, is the number of excellent illustrations throughout the book, showing the correct position for the different exercises. The book is well adapted to supplement work in physiology, and we cordially commend it for use in the school and home.

A five-year-old boy went with his mother to make a call. The lady of the house, who was fond of children, told him she meant to ask his mother to let her have him. "Don't you think your mother would let me buy you?" she asked.

"No, ma'am," answered the little fellow, "you haven't money enough."

"How much would it take?" she continued.

"Three hundred dollars," said the boy, promptly, as if that would settle the matter once for all.

"Oh, well, then," said the woman, "I think I can manage it. If I can, will you come and stay with me?"

"No, ma'am," he said, with decision. "Mamma wouldn't sell me, anyhow. There are five of us, and mamma wouldn't like to break the set."—[Buffalo Enquirer.

The little wildflowers are tired of play,
And weary of field and sun ;
The birds and the bees have gone away,
The song of the rain is done ;
So now they nod on their beds of sod,
While winter winds o'er them sing,
And sleep so deep, knowing well that God
Will awaken them in the spring.

—JAMES COURTNEY CHALLISS.

PHYSIOLOGY TOPICS FOR JANUARY

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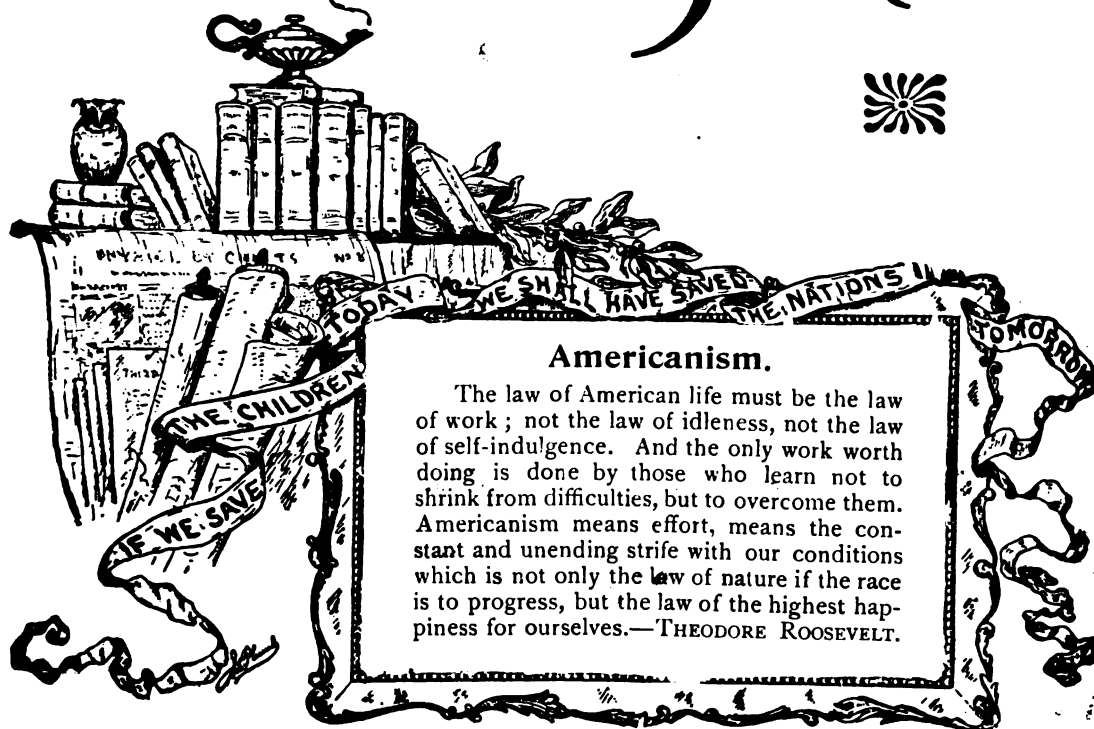


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BE STRONG

"Be strong!

We are not here to play, to dream, to drift,
We have hard work to do, and loads to lift.
Shun not the struggle,—face it; 'tis God's gift.

"Be strong!

Say not the days are evil. Who's to blame?
And fold the hands and acquiesce,—Oh, shame!
Stand up, speak out, and bravely, in God's name.

"Be strong!

It matters not how deep intrenched the wrong,
How hard the battle goes, the day how long;
Faint not,—fight on! To-morrow comes the
song."

AN INVINCIBLE FORCE IN HUMAN AFFAIRS

RETROSPECT and forecast are the moods induced by the close of a century and the entering upon another hundred years of world history.

The first century dates from the reign and advent of two wholly different masters. When the year one opened, the inhabitants of the earth were bending in slavish fear and misery at the feet of the first of these masters, the emperor of Rome the mistress of the world. His mandate was "Obey me or die." In the midst of that moral darkness and slavish submission to cruel despotism, the second Master came and announced the new truth that all men are equal in God's sight, and that God is the Father of all.

"The slave in the intervals of his torture, the captive in his dungeon, the widow and orphan," souls longing for escape to that purity to which the human heart can never become wholly dead, all these heard the glad news, and hope was born. Freedom and liberty became words to conjure with, and the rallying cry of the oppressed. As the centuries have rolled by, the idea that liberty is a God-given right has so changed the world's history that its story seems to be a progressive resistance to the tyrannies that one after another have held humanity in bondage, and an emerging from them.

As we enter upon the twentieth century, throughout almost all Christendom the coarse forms of monarchial despotism have given place to representative governments; human chattel slavery is no more in civilized lands; the loneliness of isolation is broken by modern intercommunication which brings to the home of

the laborer of to-day luxuries the monarch could not command a hundred years ago; and the despotism of ignorance is being dispelled by education.

There have been marvelous gains for humanity in these nineteen hundred years. The track of the centuries is strewn with the broken shackles of human bondage struck off as the generations have moved, each farther on and higher up than its predecessor. Nevertheless, we are obliged to admit that the worst of all forms of oppressive slavery still remains in the very heart of our highest civilization—the slavery of alcohol.

It is the worst of all, because it is a voluntary enslavement of body and soul, for this world and for that which is to come. Slaves of the Cæsars hated their despotic masters and plotted for freedom; the slave of alcohol loves his enslaver and plots and plans to gratify the appetite which continues his bondage. His will is so completely enchained that the voice of reason, conscience, ambition, and affection are alike unheard and unheeded. It is an old slavery. Dating from the beginning, it has survived all the battle cries for freedom since the first pages of human history were written.

The twentieth century opens in our country with the tax on alcoholic liquors constituting a large part of the revenue of the United States. The more there is manufactured and sold the more revenue there is in the national treasury. Alas, for the blinding power of money! The fact that an increase in the sales of alcohol means an increase of enslaved citizens has not yet moved the conscience of our nation, or caused the alarm for the future that the case demands.

Under this government of the people any hope for the overthrow of this evil that might come from legislation waits on public opinion. The press—the daily and weekly papers and the magazines—is a mighty modern agency for making public opinion. Here again the power of money helps perpetuate this bondage. Profitable liquor advertisements close the columns of the press to protests against this alcoholic slavery, for fear the liquor advertiser may be offended by utterances that might hurt the sale of liquor.

Public officials, both legislative and executive, down to the last constable hesitate to speak or act upon this burning question either before or after election, unless they are sure that a strong majority of their constituents are opposed to

this bondage. Otherwise it might cost them their offices.

Thus appetite, money, and office constitute a three-fold trinity of silence favoring this evil. Strange paradox in a land devoted to free speech that alcohol should thus have the right of way! Is there, then, no hope? Must this slavery, as in the past, go on through the annals of all coming time? In the centuries gone there have been signs that presaged deliverance from a special tyranny; are there no such beacons of light now? Yes, there are. The fourteenth century dawned upon a world sunk in intellectual torpor, but historians say that it must have been evident to far-seeing observers of that time that some great change was in progress during the whole of that century; not so much from the doings of knights, nobles and kings, as from the uprising of the human mind that had lain so dormant since the fall of Rome that most of the intervening centuries had been styled the Dark Ages. Four great men appeared almost simultaneously in the fourteenth century, but in different countries,—Dante, Petrarch, and Boccaccio in Italy, and Chaucer in England. These men awakened in others that aroused intellectuality which they represented, and which led to the invention of printing, the spread of knowledge and the discovery of America, all in the next, the fifteenth century. History shows that something like this experience of the fourteenth century is the experience of all time. When the world needs a new truth men are raised up to search for it simultaneously in widely separated parts of the world, and without conference, each in his own field.

History shows that one of the first symptoms of a new era is an awakened sense of the evil and of the possibility of something better. The people of France in the sixteenth century were incapable of the revolution of 1789. Nothing could move them, until later they came to realize that abject poverty and slavish misery are not the inevitable fate of human beings. Stolid acceptance of an evil, giving place to a groping, at least, after something better, is always a harbinger of coming emancipation. An awakening to the horrors of alcoholic slavery and struggle against it are more or less manifest throughout Christendom to-day. This awakening first made its appearance in the United States and England early in the century just gone. A stolid feeling of hopeless despair has in the past found voice in the worldwide lamentation: "The ravages of drunkenness are awful! But men will drink to excess. They always have and always will and you can't help it. There is no use in trying." This pessimistic jeremiad has given place to the inquiry as widespread as itself, "Is it the weakness of the drinker or the nature of the drink that leads to drunkenness?"

Nothing can answer this question but a study

of the nature and effects of alcohol upon the human system. Thus the spirit of scientific inquiry has been aroused.

The writer remembers the intense interest awakened by the description given, in a quiet conversation on the shores of Lake George, by the late venerable Robert Rae of London, of his personal efforts in 1873 for another phase of temperance; efforts which resulted not in what he asked for but in far more, the original scientific investigations as to the nature and effects of alcoholic drinks by Sir Benjamin Ward Richardson. These investigations proved that total abstinence is great Nature's law, and their report, made just as the last quarter of the departed century dawned upon the world, was epoch-making.

No student of the great events which mark the centuries can fail to see that there is a force in the affairs of men, entirely above and beyond their ken, a force which they may lack the foresight to recognize at the time, but which, nevertheless, is making for righteousness.

Note here one of the movements of that force. We call it Providence. Its work was independent of the scientific movement in England, but simultaneous with it, both resulting in search for the same truths.

During the first of the last quarter of the century just gone, the governments of continental Europe became anxious over their loss in taxes, and the failure in men to reach the required physical standard for soldiers. Inquiries were sent out to learn the cause. This resulted in the calling of a biennial continental "Congress for the Prevention of the Abuse of Alcohol," composed of representatives from university and government circles. This Congress has held seven sessions. The next one is to occur two months hence, in April, 1901, in Vienna, Austria. The work of this Congress quickly became that of scientific inquiry as to the nature and effects of alcohol upon the physical, mental and moral nature of the human being. Investigations upon these topics which have been carried on in the famous physiological laboratories of Europe are reported to this biennial Congress, and by them to the world.

The reports of the scientific investigations of Sir Benjamin Ward Richardson of London reached this country in 1875, just as the last quarter of the nineteenth century had dawned upon disappointed hopes, because efforts for the reform of the drunkard had proved so futile, and many were turning to political methods. While men of notable standing in science, like Dr. N. S. Davis, Dr. Willard Parker and others, had taken a strong stand against alcohol, there had been in this country but little original physiological work to show its nature and effects, in comparison with that carried on in Europe.

Nevertheless, the truth was out and vouched

for against alcohol, and the people were being destroyed for lack of knowledge. Then came years of pleading by the writer with tongue and pen throughout this and other lands, from legislature to Congress and to legislature again for the scientific education of the rising generation in the great facts so graphically set forth by Richardson and others, and of work with authors and publishers as the discoveries of the latest scientific investigation were put into graded text-books for school use.

The new century dawns upon the United States with every public school pupil in this country, except those in Georgia and Utah, under laws that require them to be taught, with other laws of hygiene, those which relate to the effects of alcoholic drinks and other narcotics, and with a great school literature that even Professor Atwater, the brewers and their emissaries can not prove inaccurate.

But are these text-books not opposed? O, yes, by people who have yet to be informed as to the truths they teach. The wife of a young engineer went with her husband into the mountain sections of a sparsely populated country. Pity led this young lady to gather the neglected children she saw there for stories that led to their learning to read; but when she showed those children maps and told them of beautiful cities and places beyond the mountains where they lived the older people mobbed this lady. They said the mountains had always been good enough for them and all their folks, and they reckoned they were good enough for their children. They would not have such notions put into their heads. Teach in the schools or out, in cities or mountains, a truth that is in advance of the intelligence of the people, that cuts across appetite, interest or prejudice, and opposition will follow.

But do not be in the least dismayed or stop

your lessons. It is God's truth and not yours, and it is for the healing of the nation. As we teach let us remember Wendell Phillips' words:

"Plant only the tiniest seed of concession and you know not how many and how tall branches of mischief will grow from it."

If we are only loyal to the utmost truth, God will use it in ways we can not imagine for freedom from the alcohol bondage. Sometimes the planting season seems long and difficult to some of us, but the harvest is sure and

"Behind the dim unknown
Standeth God within the shadow keeping watch
above his own"

It is now nineteen years since the first tem-

perance education law was passed in this country. It is ten years since the indorsed books have been in anything like universal use in the schools, with their plain lessons of warning truth adapted to all grades of pupils. During that time there have been some schoolmen who did not and now do not know which is right, the alcohol or abstinent side. Some have been afraid of losing their timid heads, and with others ardor for the study has been cooled for reasons of their own, among which the most creditable is the fact that the pedagogical side of this study may not have been thrashed out before them until its defense became familiar. Added to



"Dream not helm and harness the sign of valor true;
Peace hath higher tests of manhood than battle ever knew."

these hindrances, during the last two years, is still another form of opposition which has appeared in the subtle and active Atwater campaign of so-called science in favor of moderate drinking, and against the indorsed instruction. Nevertheless, the results of the ten years of temperance teaching, as shown in our industrial records and the comparative consumption of alcohol set forth on page 89 of this Journal, are evidence of the faithful work for scientific temperance done by the great majority of school authorities and teachers in our beloved land.

In behalf of that land and its mission in the world we extend to these loyal souls in the educational ranks the gratitude of the future. Time will show that theirs has been a greater work for freedom than even that of the men who wear the Grand Army badge.

The hopeless night of alcoholic slavery has been long. Its darkness has been popular ignorance of the subtle power of a little to create the destructive appetite for more, but the dawn is appearing. The schools have broken the silence against alcohol in this country, and other nations are having preliminary discussion to the same end.

What history with its perspective calls the fullness of time was the conjunction of events that otherwise might have passed unheeded. Without the investigations of Sir Benjamin Ward Richardson, first begun in 1863, but not publicly reported until 1875, we should not have had sufficient scientific data, not enough truth that had been authoritatively proved to have warranted the temperance education movement in the public schools of this country. In the preparation of the first text-books every statement from a lesser authority was always rejected unless confirmed by Richardson. If the report of Dr. Richardson's investigations had not come just when the public mind in this country was in a receptive mood for the suggestion of an educational method for the prevention of the drink ruin, if it had not come just when conditions were convincing politicians that something must be done for the temperance cause, and if this proposed education had not promised not to be immediately revolutionary, the movement could not have been the success it has been. Similarly, if the investigations in scientific circles on the alcohol question on the continent of Europe had not been a feature of the last quarter of the nineteenth century, confirming Richardson's findings, we should have lacked much evidence which now contradicts the Atwater fallacies.

But all these co-operating events would have failed to secure scientific temperance instruction for this country if there had not been on this side of the water a spirit of watchfulness, waiting for the truth as for the morning to gather it up, defend it, and put it into shape for all classes of minds.

These facts point to a co-ordinating force, above and beyond men, guiding humanity to a climatic hour of emancipation from the slavery of alcohol.

Near the poles, when the sun rises above the horizon of the long winter night, nature seems always in haste to perfect her vegetation, and the quick fruitage of the long buried seed is startling. Something like this transpired in the United States Senate on the eighth and ninth of the first January of this new century. For

two whole days grave and learned senators discussed alcoholic slavery in the pending question, "Shall beer and alcoholic liquors be sold on grounds and transports occupied by the army of the United States?" The record of that debate reads like the speeches made in the same chamber in the first half of the last century by Clay, Webster, Hayne, Calhoun, and later by Sumner on "The Irrepressible Conflict," over that other bondage, human chattel slavery.

In the recent debate, the speeches set forth in pungent oratory and merciless logic the "shock to the moral sentiment of this country that the government of the United States should put back of liquor-selling its great force and character."

But the masterly presentation of testimony founded on the bedrock of the latest scientific truth as to the nature and effect of alcohol, especially in beer, quoted from investigations from the old world and the new, came in the speech of Senator J. H. Gallinger, M.D., of New Hampshire. The fact that it was followed by a vote of thirty-four for the prohibition of beer and all intoxicating liquors in our army posts, and on our army transports, to fifteen against, after the enemy had exhausted every effort, shows not only the power of the winning arguments, but that the truth thus represented has taken root in that public opinion before whose mandate the Senate must bow under a government of the people. Those votes were the flowering of total abstinent seeds of truth planted by many hands, but by none more than by the teachers who have been faithful in impressing the very lessons which Senator Gallinger used with such good effect in the Senate, from the indorsed text-books which the children in our public schools are studying.

On these anniversary days, when we recall the birth and lives of Washington and Lincoln, one the Father, and the other the Saviour of his country and the emancipator of a race of slaves, we urge upon schoolboards, school officers and teachers that loftiest of all patriotism demanded by the hour, the fulfilment of the utmost duty for that instruction of the young which will complete the emancipation of their generation from alcoholic slavery.

MARY H. HUNT.

One deed may mar a life,
And one can make it;
Hold firm thy will for strife,
Lest a quick blow break it!
Even now from far on viewless wing
Hither speeds the nameless thing
Shall put thy spirit to the test.
Haply or e'er sinking sun
Shall drop behind the purple West
All shall be lost—or won!

—RICHARD WATSON GILDER.



Primary Lesson

POLITENESS

A man by nothing is so well bewrayed
As by his manners.—FAERIE QUEENE.

WE are assured by educational leaders whose fingers are on the pulse of the public school, that the time is not far distant when pupils will be marked upon character before scholarship.

Hitherto, in our zeal to educate we have too often trained the head at the expense of the heart, until the rudeness of American children has become proverbial. The remedy lies in our own hands. We must teach manners as well as matter, and by what we do no less than by what we say. If "the republic can not live amidst ignorance," still less can it survive a lack in moral character, and in that manliness and womanliness which are its chief exponent.

Children are born imitators, and we have only to lead aright to make sure of their following. A mother noticed that her little boy soon after entering school had lost his rough, noisy manner and was becoming very thoughtful of others.

"Does Miss Grove teach you to be polite?" she asked one day.

"No, mother, she never says a word about it."

"But what does she do?" persisted the mother.

"She just walks around and we all feel polite."

No other spirit was possible in that school-room because of the influence radiated from the teacher. Similarly, there is not one child in a thousand who does not respond to the atmosphere of a church, a library, a refined home or schoolroom.

If every request, every acknowledgment of a favor, the directions for an exercise, the teacher's very entrance into the room are all based upon true courtesy, the pupils will unconsciously shape their conduct in some measure by the gracious pattern set them. Without this living exemplar the most explicit instruction in manners will have little effect. With it as a perpetual background, an occasional lesson in the details of politeness will stand out clearly, and influence the child's subsequent action.

In the present article attention is called to three phases of this topic:

What is meant by politeness.

Its effect on others.

Its effect on ourselves.

(1)

WHAT POLITENESS IS

It is seldom wise to call public attention to an act of impoliteness of which a child has been guilty. A more efficacious method is to deal with the offender in private, or, if the attention of others has been already directed to the fault, to point out a better course of action indirectly, perhaps by an illustrative story.

Suppose one of the children has some special dainty for lunch, and instead of eating it quietly, or sharing with his mates, he calls attention to his good fortune and their lack. This discourtesy is rarely intentional on his part, and may need only to be understood as such to be discontinued. Pass it over at the time, and when the next story hour arrives tell the children

HOW A DOG GAVE A LESSON

Fritz was a little German boy. He had two pets, a tortoise-shell cat named Gyp, and Prince, a dear little black and tan dog.

Usually they played together very happily. Prince would carry anything his master told him to, and he was never too tired to go for a romp.

One hot day Fritz's mother gave him a buttered roll and sent him outdoors to eat his lunch under the trees with Prince and Gyp.

Usually all shared whatever one had. If Prince found anything interesting he would come bounding up to Fritz with it; and Gyp never thought of catching a mouse and eating it all by himself. One day he even laid a big fat one on Fritz's plate at dinner before anybody could stop him.

So, to-day, they naturally expected Fritz to divide his roll with them. But Fritz was cross that morning, and his pets had to suffer from his ill temper.

Prince sat up and begged his prettiest, and Gyp asked him just as sweetly as a cat can mew for a bite, but all in vain. Fritz munched sullenly away, paying no attention to either of them.

When his mother came out to join the party, she was surprised to find such a selfish, impolite little boy; but she sat down as if nothing had happened.

"I saw two dogs this morning," she said brightly, "and one was giving the other a lesson."

Fritz was interested at once. "How could a dog give a lesson?" he asked. "Dogs can't talk."

"I'll tell you," said his mother.

"When I reached the park a blind man was standing there. He was led by his dog, and I never saw a more miserable, half-starved creature.

"Just then a little girl came along with her pet dog. He was a very different looking animal, sleek and fat, with a collar and bells tied with a smart little ribbon around his neck. But he was a surly little fellow for all his fine looks, and scolded and snapped at everybody they passed.

"When he saw the blind man's dog he drew back in disdain, and looked up into his mistress' face as much as to say, 'Do let's hurry away from that dreadful creature!'

"But, fortunately, she was a kind-hearted little girl, so she dropped some pennies into the poor dog's basket, and here is where the lesson comes in.

"He sat up on his hind legs and bowed as nicely as you could. Then he barked his 'thank you,' and last of all he held out his paw, first to the little girl, then to her dog.

"'There, Fido,' I heard her say, 'he is a great deal more polite than you. Aren't you ashamed?' And Fido did look as if he were sorry the street dog had beaten him in good manners."

"That was a pretty smart dog," said Fritz admiringly. "I wish Prince knew as much. How do you suppose he learned?"

"Probably his master is always polite to him," said his mother.

Fritz blushed. "I wasn't very nice to Prince this afternoon, but I'm going to be after this. I want him to know as much as a tramp dog."

"And I want my son to be as polite as that little girl. Do you suppose he wants her to beat him?"

"No, indeed," said Fritz. "But how can I be polite. Lots of times I don't know what to do, and sometimes I forget what I do know."

"The best way is always to think of the feelings of others, and try to do what will make them happy," said his mother. "Suppose you

keep this in mind, and tell me to-night how many ways of being polite you have found for yourself."

Fritz honestly tried, and when he and his mother had their good-night talk she discovered that he had been polite in nine different ways that day.

How many ways of being polite can you think of?

PROBLEMS IN POLITENESS

Let the children suggest acts of politeness at home and elsewhere, and encourage them to carry out their suggestions whenever possible. Write on the board, as opportunity offers, the following questions, one at a time:

How can I be polite to my parents? my brothers and sisters? my teacher? my playmates? to old people? to strangers? to ladies?

How can I be polite at home? at the table? in church? at any public meeting? in school? on the playground? on the street?

How can I be polite when any one does me a favor? when I am asked a question? when I must pass in front of some one? when I hand anything to another?

The teacher should leave the class free to think out their own answers to these questions, helping only when necessary to settle doubtful points, or to suggest additional opportunities for politeness.

The children's own answers, when correctly given, should be written opposite each question considered.

(2)

EFFECT OF POLITENESS ON OURSELVES

The teachers will early realize that it is one thing to teach rules of politeness until these are thoroughly familiar to every child, and quite another to help children practice them until they have become second nature. But this result was attained in the days of our grandparents, when politeness was taught as thoroughly as arithmetic, and now that it is again receiving, in part at least, the attention it



"Fritz was cross that morning and his pets had to suffer."

deserves, we may look for better manners in the child of to-day.

When the children understand, in some measure, what is meant by politeness, a great incentive to kindly acts will be found in stories showing the effect of such deeds upon the character of those who perform them.

Show how this is true by tales of the knights of olden times, emphasizing not the battles they fought but their kindness to the weak and helpless, and their thoughtfulness of others before themselves.

Tell the familiar story of Sir Walter Raleigh and his cloak. When the point is reached where the queen is stopped by the mud, let the children tell what they would have done if they had been one of her courtiers. Then describe Raleigh's impulsive act.

Ask them what kind of a young man this shows Raleigh to have been. How do we know he thought of others before himself?

Tell the children of Sir Philip Sydney's courtesy to the wounded soldier, in giving him the water brought to quench his own thirst, because he thought

the poor man needed it more than he did.

Explain what a knight was, and how he had to live and conduct himself to be worthy of the name. Help the children to see how the constant acts of politeness and chivalry which these people practised reacted on their lives and made them truly heroes.

Do we have knights nowadays? Explain that they are not often called by this name, but that there are just as noble men and women now as at any time in the past. Who knows of any such? Who would like to be a knight? How can you be one? How must you behave?

Any history of Lincoln's life will give many instances of his true politeness and kindness of heart. Tell these to the children, then let them tell you what kind of a man he must have been.

Queen Victoria's thoughtfulness of others has been told in so many anecdotes that it will be

easy to draw similar illustrations from her life. Florence Nightingale's devotion to the soldiers has helped to make her the beautiful character she is. Show her picture to the class and read them Longfellow's "Santa Filomena," explaining enough of her work to make the poem clear.

Ask the children to name some of the most polite people whom they know, in their own town or elsewhere. Why do we all like to meet such persons, and why is it that they make every one about them happy?

(3)

EFFECT OF POLITENESS ON OTHERS

Explain why, other things being equal, the polite boy or girl is the one who gets on best with others and is always a favorite with his mates.

Later on, the polite person is sure to get the best position in business.

Who knows why this is true? Why do we like to have polite clerks to wait on us in stores? Why do we like always to do business with polite people.

Politeness has its effect on animals as well as



"Fortunately, she was a kind-hearted little girl."

on people. Let the children tell how their cat, dog, or other pets respond when they speak kindly and gently to them.

The story of Jocko will bring out this idea.

HOW POLITENESS MADE A FRIEND

Jocko traveled about all day with a street musician. He wore a scarlet coat and a bright green hat, and was the cutest little monkey in the city. At least, that is what all the children thought.

When the music began he danced in his funny little way. When it stopped he ran around among the people for the pennies they threw him, and hurried off with them to his master.

One day a large fierce dog spied Jocko and rushed at him with wide-open mouth. Jocko was too little to fight, and he had no time to run away. His master started to save him, but be-

fore he hardly started Jocko had saved himself.

When the big dog was almost upon him, Jocko stood up very straight, took off his little cap and made the most polite bow you ever saw.

The dog was so surprised he didn't know what to do. This was his first experience with monkeys and it confused him.

He stopped short, lost his fierce look, and finally began to wag his tail in a very friendly way.

After that, whenever he caught sight of Jocko he would run to meet him and they would have a little play together. Sometimes Jocko would climb on his back for a ride, and they both seemed never so happy as when together.

After telling this story to the children let them tell what politeness did for Jocko. What did it do for the cross dog?

Do we know any disagreeable person whom we are almost afraid of? How have we treated him? Did we ever try Jocko's way? Let us try it next time and see if we can not make him a friend.

TEN RULES OF POLITENESS

1. To be polite is to have a kind regard for the feelings and rights of others.
2. Be as polite to your parents, brothers, sisters and schoolmates as you are to strangers.
3. Look people fairly in the eyes when you speak to them or they speak to you.
4. Do not bluntly contradict any one.
5. It is not discourteous to refuse to do wrong.
6. Whispering, laughing, chewing gum or eating at lectures, in school, or at places of amusement is rude and vulgar.
7. Be doubly careful to avoid any rudeness to strangers, such as calling out to them, laughing, or making remarks about them. Do not stare at visitors.
8. In passing a pen, pencil, knife, or pointer hand the blunt end toward the one who receives it.
9. When a classmate is reciting do not raise your hand until after he has finished.
10. When you pass directly in front of any one or accidentally annoy him, say "Excuse me," and never fail to say "Thank you" for the smallest favor.—[School Board of Santa Barbara, Cal.

Great occasions do not make heroes or cowards; they simply unveil them to the eyes of men. Silently and imperceptibly, as we wake or sleep, we wax and grow strong, we grow and wax weak, and at last some crisis shows us what we have become.—CANON WESTCOTT.

ABRAHAM LINCOLN

The color of the ground was in him, the red earth,
The tang and odor of the primal things,—
The rectitude and patience of the rocks;
The gladness of the wind that shakes the corn;
The courage of the bird that dares the sea;
The justice of the rain that loves all leaves;
The pity of the snow that hides all scars;
The loving kindness of the wayside well;
The tolerance and equity of light
That gives as freely to the shrinking weed
As to the great oak, flaring to the wind—
To the grave's low hill as to the Matterhorn
That shoulders out the sky.

And so he came,
From prairie cabin up to Capitol;
One fair ideal led our chieftain on.
Forevermore he burned to do his deed
With the fine stroke and gesture of a king.
He built the rail pile as he built the state,
Pouring his splendid strength through every blow,
The conscience of him testing every stroke,
To make his deed the measure of a man.
So came the captain with a mighty heart;
And when the step of earthquake shook the house,
Wrenching the rafters from their ancient hold,
He held the ridgepole up and spiked again
The rafters of the home. He held his place—
Held the long purpose like a growing tree—
Held on through blame and faltered not at praise.
And when he fell in whirlwind, he went down
As when a kingly cedar, green with boughs,
Goes down with a great shout upon the hills.

—EDWIN MARKHAM.

"As no one can live to himself alone, as he needs the service of his fellows—so he must hold himself bound to render service. These lessons are taught by the mutual courtesies of the schoolroom."

ON THE THRESHOLD

Joy to the laughing troop
That from the threshold starts,
Led on by courage and immortal hope,
And with the morning in their hearts.
They to the disappointed earth shall give
The lives we meant to live,
Beautiful, free and strong;
The light we almost had
Shall make them glad;
The words we waited long
Shall run in music from their voice and song.
Unto our world hope's daily oracles
From their lips shall be brought;
And in our lives love's hourly miracles
By them be wrought.
Their merry task shall be
To make the house all fine and sweet,
Its new inhabitants to greet
The wondrous dawning century.

—EDWARD R. SILL.

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"Ah! when shall all men's good
Be each man's rule, and universal Peace
Lie like a shaft of light across the land,
And like a lane of beams athwart the sea?"

THE NEED OF VIGILANCE

IT is time for an earnest appeal to the friends of temperance to be vigilant. The liquor interest claims that its business is on the decline, and some of the brewers are said to be losing money. The complaint is made that the young men do not drink so much as those of former generations, and this is attributed largely to the instruction respecting alcohol in our public schools. There are evidences that a persistent and determined effort will be made to have this instruction changed or entirely omitted. With free access to the young, the alcohol business is thought to be able to take care of itself. One aim is to influence teachers against the instruction; then politicians can easily be manipulated.

Evidently, the temperance sentiment has grown and is making itself felt. It is receiving a powerful ally from an unexpected quarter of continental Europe. A remarkable literature in favor of total abstinence is being developed under the leadership of German scientists and physicians. Startled by the havoc made by alcohol, they have patiently and thoroughly pursued the scientific method in investigating the causes of crime, insanity, suicide, poverty, degradation, ruined homes, individual and social misery, and national danger. The result is that they oppose the prevalent drinking customs, regard moderate drinking as a danger to the drinker, and are effecting a revolution in the use of alcohol in medical practice.

After a thorough investigation, Dr. Max Kasowitz, professor in the University of Vienna, reaches this conclusion:

"For the animal and human organism alcohol is not both a food and a poison, but only a poison, which, like all other poisons, is an excitant when taken in small doses, while in larger ones it produces paralysis and death."

—The Homiletic Review.

ONE FACTOR IN OUR TRADE SUPREMACY

AMERICAN trade supremacy is just now a topic of newspaper discussion in Europe. A recent number of a London paper, "The Express," published an article with the startling headline, "Wake up, England!" the purpose of which was to arouse interest in the question, Is England losing commercial position?

Another London paper, in searching for the cause of England's lack of ability to compete with other nations in trade, after citing as an illustration the fact that in one shipyard alone there was last year an injury to its output of twenty-five per cent from drinking men, said:

"If we are not able to produce better, faster and cheaper than other countries our sober rivals will come and capture our trade."

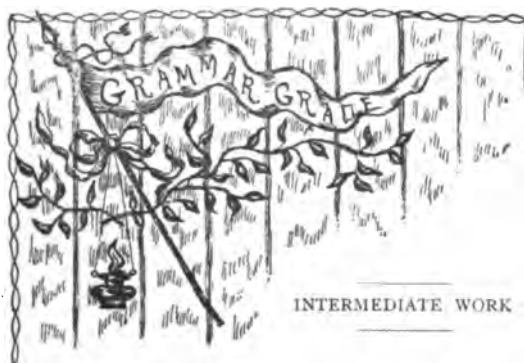
The same paper quotes the British Medical Journal as authority for the fact that Great Britain's per capita consumption of alcohol is nearly twice that of the United States.

In 1870, France, smarting under the defeat of the Franco-Prussian War, and looking around to find the cause, said, "It is the German schoolmaster. The Germans are better soldiers because they are more intelligent. We must have public schools."

Again it is the schoolmaster. Sixteen years ago, in obedience to laws enacted by Congress and state legislatures, the public schools in this country began to teach all pupils that one of the effects of alcoholic drinks is so to injure brain and muscles that the drinker can not do such good work as the abstainer. Soon after, banks, railroads, manufactories and responsible business of almost all kinds began to demand that their employees should be total abstainers.

England has no such system of compulsory temperance education in its public schools as we have, an education that is teaching the people in this country the relation of total abstinence to that success which means supremacy. This industrial supremacy is the more significant because of the fact that labor receives here a larger wage than in the old world. All the advantage due to our great natural resources, and to our extended domain under one government, and that the freest in the world, would not give us commercial supremacy or any other advantage if our industries were losing twenty-five per cent per annum of their output because of drinking workmen.

Among the causes that go to make up a nation's strength the most potent are often the quiet ones of education, seldom recognized until they reappear in the acts that make history. Total abstinence, with the education that secures it, is a part of that Godliness which is profitable not only for the life that now is but for that which is to come.



THE AVERAGE MAN

DESPITE all the wonderful achievements of the nineteenth century, no one has yet sounded the limits of a single human soul. This is still undiscovered territory, at the threshold of which we must halt and content ourselves with providing the individual explorer with chart and compass. He must work out his own destiny.

We have taken a long step in advance when we realize and accept this fact with our pupils; when we cease trying to cast them in the same mould, excellent though this may be, and treat each as an independent personality with peculiar tastes and inclinations which must be taken into account.

The idea of self-government is inseparable from this new education, and it is the child's first lesson in citizenship. If the government of the schoolroom is a despotism, or even a limited monarchy, how is he to live wisely in a republic as soon as his school days are ended?

Educators are devoting their best energies to the preparation of a course of study which shall lead without break or repetition from the kindergarten to the university. Why should they not also devise a scheme by which the child may practice self-government through the different grades, before being thrown entirely upon his own resources as a responsible citizen?

The majority of pupils go through school with little feeling of responsibility, except to learn their appointed lessons. They expect their teachers and a few leading spirits in their own ranks to do the rest. We must banish this indifference, and make them realize that the average pupil has his own place to fill, his own conduct to govern, and that he and millions like him are soon to constitute the state and determine its strength or weakness.

Some men have made good college presidents who could not spell, but no amount of education will make one a good American citizen unless he has learned to govern himself. If civics is not included in the curriculum for intermediate grades, curtail some other lesson occasionally, or devote a few minutes at the opening or close

of school to practical talks on citizenship and how it concerns boys and girls.

Instead of talking of the great men of the world, begin with a discussion of the average man, considering first,

WHAT HE HAS DONE

The great events in the history of the country are familiar to most pupils in the grammar grades. Take up each, as you have opportunity, and call attention to the part played by ordinary people in bringing it about.

To whom, for instance, belongs the credit of discovering America? Ask the class if Columbus could have succeeded in his great enterprise alone. Who helped him? Could he even have left Spain if no sailors had been found to undertake the long voyage with him?

How is the same true of other great explorers who visited our shores and penetrated into the mainland? Who were the leaders in making the first settlements in this country? Would the colonies they planted have been a success without the plain men and women who came with them? How did these help?

Have the class name some of the great military heroes they have read or studied about; then tell some of the ways in which each made himself famous. Was he able to do this work alone? The indomitable courage and wonderful sagacity of Washington and Grant turned the tide of battle in the Revolution and the Civil War, but even these great generals could not have succeeded without the help of the rank and file of their armies. How much was their success due also to the women, old men and children who worked at home and helped to keep the armies supplied with food and clothing?

The railroads and telegraphs which connect all cities of the United States have done more than most other agencies to open up the country and make the settlement of the central and western states possible. Ask the class to find who have been the leading spirits in carrying through these great enterprises. How were they helped? What would have been the result if they had not had men enough to prepare the road bed, lay the rails as well as make them in the first place, and put up the telegraph poles and wires which they needed? Why were both the genius of the inventors and managers, and the physical labor of the employees necessary to accomplish these important works?

Take up, similarly, other vast enterprises; the postal system of this country, for instance. Who is at its head? How much could the postmaster-general do in the way of handling the millions of letters and papers which pass through the mails every day, if it were not for the thousands of postmen who sort and start each piece in the right direction, and finally deliver it at our doors?

How does the merchant need his clerks, the ship captain his sailors, the mine owner his miners, the head of every business his employees, in order to carry on the work he plans? Ask the class to name the great undertakings and all the different kinds of business they can think of; then ask them to state what part the average man or woman has played in each. In how many cases could the work have been done without their help?

Consider also with your pupils some of the everyday things which have been done in your own vicinity. What has the average man had to do with tilling the soil? building the houses? making the roads? establishing the schools and churches? putting up mills and factories? performing every kind of work which has had to be done? Why have such men always been needed in the army? the navy? the shop? the store? the factory? the railroad? the postoffice? the mines? the printing-office? the school? the different professions?

WHAT HE MUST DO

After reviewing with your pupils the different lines of work in which ordinary people have been needed in order to make our country what it is to-day, lead them to think of what must still be done by the same great class.

In the kinds of work already started, but not finished, show how absolutely necessary the work of the rank and file is to success. New railroads are constantly being built; better roads must be constructed to meet the needs of the bicycle and automobile; additional factories and buildings are to be erected and opened; the raising of poultry, and the culture of fresh fruits and vegetables is increasing; more books and papers are being printed; our army is being enlarged; and new ships are all the time being added to our navy.

Who is actually to do all these things? Show

that in every case it is not the millionaire, nor the expert, nor the hero or genius, but the plain man of the people who knows how to work and is willing to do so. Explain that in these undertakings, as in everything else, the exceptional man is needed to originate plans and enterprises, to supply the necessary capital and to direct the work, but that he can do little of the actual hand labor himself, hence the average man is wanted, a thousand to his one, to carry out his ideas.

Call attention to the fact that new lines of

work are constantly being opened up, and needing larger numbers of men to develop them. Ask your pupils to make a list of the great inventions which have been made during the past century, especially in its closing years.

If the census returns are available, have them find how many men are employed in even a few of these new occupations which were not even dreamed of fifty years ago. How many people are in the telephone business, for instance? the bicycle business? How many stenographers, travelling salesmen, and electrical engineers are required to-day where not one was needed when our parents were in school?

Tell your pupils there is every reason to think the century

we have just begun will witness many more inventions, and new lines of work calling for more workmen, than any part of the nineteenth century, hence there is likely to be even greater need of the average man and woman to help in carrying them out.

HOW HE CAN DO IT

When the class have had illustrations enough to show them that the average man is just as necessary in every age as is the extraordinary individual, they are ready for the important question of all, How is he to fit himself to do

"Will winter never be over, will the dark days never go?
Must the buttercup and the clover be always hid under the snow?"



Ah, lend me your little ear, love; hark! 'tis a beautiful thing;
The weariest month of the year, love, is shortest and nearest the spring."

this work? Does he need any special training?

One way to answer this question is to show how work has increased in difficulty, and how much more complex it is than was the case a hundred years ago. The man who harvested his grain then could very easily learn how to use a sickle. To-day he must understand the mechanism of a reaper. Have the class compare other ways of working at that time and now, and find how much more time in preparation, how much more skill and education are required in workmen of the present. Compare the work of a man driving a team of horses or oxen, with that of an engineer. Contrast the knowledge necessary to make tallow candles with that required to run an electric light plant. Show the difference between making a road with pick and shovel, and the use of a steam crusher and scraper.

Bring out the need of a better education to day. A hundred years ago it was not necessary for most people to read or write. How is even a newsboy handicapped nowadays if he can not read the paper readily? Show how the increased use of machinery requires laborers that are more and more intelligent, and that ordinary workmen to-day need a better education than noblemen a few centuries ago, while the necessity for a thorough knowledge of all branches of work will be far greater a few years hence than it is now.

Point out the striking fact that the Spanish War was brought to a speedy close very largely because our common soldiers and sailors were educated men in their own lines of work. If anything broke or gave out they knew just how to mend it, whether it was a bit of complicated machinery or a suspension bridge.

Who can think of something else which the workman of to-day needs besides an education? As different qualities are suggested by the class write them on the board, to be taken up one by one. Why must he have a quick eye, and all his wits about him? Why does he need a sound, strong body? Why must he be a man of good habits? Why must he be honest? truthful? punctual? courteous?

Read or tell the old myth of Walhalla and its

inmates. The only mortals who were allowed to go thither were those heroes who had died in battle fighting so bravely as to be thought worthy of immortality with the gods. These were borne to Walhalla after death by their messengers, the Walküræ, on their wonderful flying horses. Men who took no part in fighting were not thought heroes by the ancients. How do we rank such if they have done really brave deeds? What do we consider the necessary qualities in a hero? What heroes in every day life do you know of? What made them such?

Call the attention of the class to the recent order of the Chicago post-office department, forbidding the use of cigarettes on the part of all its messenger boys when they are either on or off duty, and refusing to employ a boy who has ever used them. Why should such an order be given? How does the use of tobacco interfere with any one's business ability? with his mental powers? with his health and strength? Why is it universally a hindrance to any man?

Review by finding whether your pupils have grasped the main ideas presented: that the great bulk of men and women in the world are people of average ability; that to them belongs the credit of having done most of the actual work of the world in the past, and that it will be their privilege to continue to do it in the future; that old ideas in regard to education and training will not fit people for present responsibilities; and that, above all, if one would

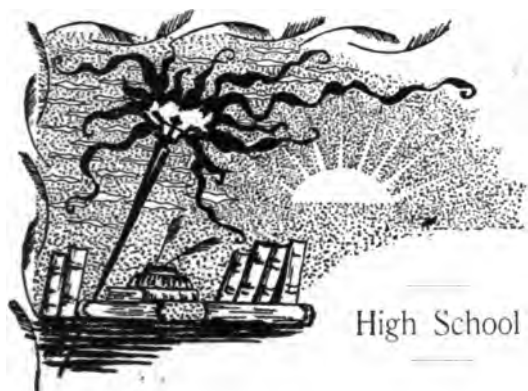
play well his part in life the opportunity lies in his own hands. If he prepares himself for his chosen business, if he is brave and honest, with clean hands and a pure heart, he will be one of God's heroes, although he may never rank among the world's great ones.

"The fault . . . is not in our stars,
But in ourselves, that we are underlings."

Queen Victoria, whose recent death is a great world loss, and all the English sovereigns since Edward I. have been crowned in the chair pictured on this page. Under the seat is the famous stone from Scone Abbey, Scotland, which tradition identifies as the one upon which Jacob rested his head at Bethel.



England's Coronation Chair



THE MAKING OF CITIZENS

"TO be a success," says Theodore Roosevelt, "a man must have the right kind of heart, he must be upright and decent, he must be brave, he must have common sense and intelligence. If he has these qualities he has the making of a first-class American citizen."

In monarchical countries the heir to the throne receives thorough training in the science of government from childhood. No detail bearing on his future work as ruler is too trivial for him to consider, no task too exacting. He must know his own country and his future people with their peculiarities and needs, and be able to protect their interests against the encroachments of foreign powers.

In America alone it is thought sufficient for the rulers to be born such, consequently our people grow to manhood and take to themselves their insignia of power, the right of suffrage, with little or no preparation for the mighty task of self-government, or the proper control of colonies. Gradually, however, we are finding out that optimism alone will not safeguard the state, or fit men for citizenship. They must be trained as thoroughly in its requirements as though each were to sit upon a material throne; thus only will the republic become the model government it is meant to be.

In what shall the training for citizenship consist? Roosevelt has well summed up the necessary personal qualities of the successful American citizen. These are fundamental, and every true teacher is already striving to develop them in her pupils. Add to them a clear knowledge of our country, its diversified needs and the difficult problems which must continually be faced, and impress upon our youth the public duties which confront him as he takes the ballot in his hand, and we shall have a first-class citizen as well as a first-class man.

By the time the high school is reached, young people should take particular interest in these questions; that too often they do not is evidence of our remissness in not bringing the matter before them in its proper relations.

Compare with them the administration of a government like our own, and the interests involved in a large estate. Call attention to the difference in training between those who are to assume great business responsibilities, and those who through their ballots are to decide the policy of a nation. Which class of people is better trained? Which class has more need of such training?

Bring out the necessary equipment for a good citizen. Set the class to finding what are the public duties of those who have reached the age of twenty-one. Direct their study by suggesting that they find out first the local duties of a citizen.

There is a town government. Have them learn what it consists of. Is it a republic on a small scale, or a democracy? What officers are necessary? What do they have to do?

How are the schools controlled? Who decides the courses of study? The length of the school year? How are the necessary supplies provided for?

Have the class make a list of all enterprises managed by the town; finding how it is lighted, policed, supplied with water. What are its sanitary provisions? What provision is made against fire? What franchises are granted, and under what conditions? How are the parks maintained?

Every voter has a voice in determining the policy of his own town in each of these respects, as well as in every enterprise in which his town can engage. Make it plain to your pupils that every one is responsible, as far as his own vote and influence go, for the wisdom or folly of these measures, for the character of the men in office, and for the manner in which they discharge their duties. If the town is badly governed the disgrace falls upon the just as well as upon the scoundrel. The remedy is in knowing the exact state of affairs, and in casting an honest, conscientious ballot.

But the citizen has duties to perform outside the limits of the town he lives in. He is also a resident of a state and a nation. What part has he to play in these wider spheres?

Take up the government of each in turn, and discuss with the class one's state and national duties. Make it clear that in every case the responsibilities of the citizen are exactly coincident with his powers. Whatever he can do he must do, and he must do it honestly. He is always his brother's keeper.

Show, also, how closely the personal element is united to civic responsibility. If the youth is not sober and upright, if he befogs his mind and lowers his moral tone by the use of narcotic poisons, he will not be able to measure correctly his own duties as a citizen, or demand a high standard from those whom he has helped to place in power.

NINETEENTH CENTURY NOTES

V. A NEW ERA BEGUN

"Watch what main-currents draw the years,
Cut Prejudice across the grain."

THE half-way milestone of the nineteenth century very nearly marked the dividing line between an old and a new era, for in the light of the following fifty years it is evident that the greatest achievements of the century were yet to come.

Old theories and traditions as to the relations of governments to their people and to each other had held out long, and on the whole successfully, against more liberal ideas, and although repeated revolutions had brought slight gains to a few of the smaller states of Europe, the chief progress of these years toward constitutional liberty is to be found in the fact that by repeated experiment its friends were testing their ideas, and thus learning little by little their points of strength and weakness all of which was slowly paving the way for ultimate success.

In material affairs, also, the greatest triumphs of science and invention were yet to come and to lend their aid to the solution of political problems. The possibilities of steam and electricity as aids to easy, rapid communication had barely begun to be developed. This very decade, 1850-1860, marvelled at the hitherto unparalleled speed of the steamship *Pacific* which in 1851 crossed the Atlantic in nine days, while not until 1858 did the first swift message between England and America speed over the completed Atlantic cable—a message both triumphant and prophetic, "Glory to God in the highest, and on earth peace, good will to men." This same decade brought the Bessemer steel and the vulcanized rubber processes, which laid the foundation for the great steel and rubber industries of all kinds. Yet "thousands of improvements in smaller things, which were to touch most closely the comfort and convenience of every individual, were still unknown or untried."

"Thus it is evident," says Professor Andrews, "that the material progress which, in the ensuing years, was to alter the conditions of industry by substituting a world market for a local market; to alter the organization of society by individualizing the mass of the people, raising the standard of life, and substituting a new relation of labor to capital for the old relation of labor to land; to alter the practices of governments, by bringing them into closer touch with their administrative and diplomatic agents, and by increasing their resources and extending the scope of their undertakings had not advanced sufficiently far to break up the old political and social habits and make possible their overthrow in 1848. The reaction that followed this revolution testified to the last attempt of the old

ideas and methods to retain their supremacy and to neutralize the progress in political things that had been made up to this time."

The reaction from the revolution of 1848, as we have already seen, came swiftly and positively. Austria, which since 1815 had always represented conservatism, was again true to herself. She brought the rebellious Italian states into subjection, and compelled the withdrawal of the constitutions granted a few German states during the stress of the revolution. France, soon wearied of the uncertainties of her hastily established republic, fell into the plans carefully laid by her ambitious president, and by popular vote called him to an imperial throne. The times were dark for the lovers of liberty, but it was the darkness that precedes the dawn, and light broke in an unforeseen way.

A trivial quarrel had long been going on in the East between the Greek and Latin churches as to the control of certain "holy places" in Jerusalem which politically was under the dominion of Turkey, and in time Russia and France respectively became the recognized champions of each party. In 1852 the Sultan, in an amiable endeavor to please both parties, publicly granted the French demands and a few days later privately withdrew his order and decided in favor of Russia and the Greek church. The result was what might have been expected. The quarrel between the churches became one between the nations, especially as Russia, under the excuse of the necessity of protecting the members of the Greek church in Turkey, seemed about to interfere in the affairs of the Ottoman Empire in a way that to the alarmed statesmen of England and France foreboded the breaking up of that empire, and that to the advantage of Russia. Nor were they unwarranted in their forebodings, for Nicholas I. of Russia, in his now famous words, had called England's attention to the dangerous condition of the "sick man of the East," and had proposed a division of his estate whereby Russia was to take Constantinople, and England, Egypt and Crete. An intricate game of diplomacy was soon being played on the European chess-board in the vain hope of preserving peace, nor did it cease even while in the Crimean peninsula, England and France were pitted against Russia in the costly struggles at Balaklava, Inkerman and Sevastopol.

Austria throughout the war played a thoroughly selfish part. Anxious to lead in the diplomatic settlement of affairs which she knew would come at the end, she endeavored to maintain a maximum of influence with a minimum of aid to either side, and by pretexts of various kinds managed to avoid bringing her troops into actual service. As a consequence she angered both France and England, losing their confidence and much of her diplomatic

prestige in European affairs, as became apparent during the peace negotiations in Paris.

Thus one of the most significant results of the Crimean War was the displacement of Austria from the proud place of leadership she had so long held. Russia, thwarted temporarily in her plans, cherished for many years, for reaching Constantinople, lost her territory along the Danube and was obliged to withdraw for a time from an active part in European affairs, for the sake of building up her home resources which had been badly impaired by the war; Turkey, on the strength of promises of reform which she has never kept and probably never intended to keep, gained by the terms of the treaty adopted that freedom from interference from other powers which has made possible the abuses and atrocities which from that day to this at intervals have horrified the Christian world. It was Austria who selfishly risking least lost most, for her fall from leadership in the councils of Europe gave Italy and Germany the opportunities they were needing to work out unhampered independence and unity.

A master hand was at last at the helm of Italian destinies. Robert Blum, in speaking of Austria's repression, once said that "five men who managed the army can not understand that though their bullets may kill men they can not make a single hole in the idea that rules the world." So the Kingdom of Sardinia had never for a moment given up the cause of Italian independence she had so bravely but fruitlessly led in 1848 and 1849, and to the side of King Victor Emmanuel had come the statesman through whose wisdom, shrewdness and persistence Italy was fairly started on the way to independence—Camillo de Cavour. Convinced that the hope for Italy lay in Sardinia, Cavour set himself to the construction of a state which, by its liberality, its economic and political strength, should command the respect of the other Italian states and of Europe. Commercial

treaties, internal improvements and military reorganization, all carried out with good judgment, soon marked the kingdom as one of the most progressive of Europe, and no man ever took more pains to advertise his business than did Cavour that every improvement or advance made in Sardinia should come to the knowledge of Europe, either through a judicious use of the press, or through the reports of returning travelers, who were given every opportunity to compare the progress of Sardinia with the arbitrary and often foolish systems of the other Italian states.

The same motive that kept Austria from joining actively in the Crimean War took Sardinia into

it as the voluntary ally of France and England, namely, the hope of actively sharing in the diplomatic discussion at the close; and so well had Sardinia played her part that when the representatives of the courts of Europe came together to settle the terms of peace, Sardinia, to the great mortification of Austria, was admitted on equal terms with the other great Powers, and her grievances against Austria, although not acted upon, were laid open for the consideration of Europe, and Austria who "had entered the Congress as a mediator, went forth accused and discomfited."

From that day forth, Austria played into the hands of Cavour who, with quicker-witted, diplomatic insight, saw that a war with Austria

for Italian independence must eventually come, and skilfully provoked Austria to its declaration. The war of 1859 was short but momentous in its results; Austria gave up Lombardy; Modena, Parma, Tuscany, and the Romagna voluntarily voted in favor of annexation to Sardinia, while the conquests of Garibaldi brought in the two Sicilies before the end of 1860, and the opening months of the next decade saw the king of Sardinia proclaimed king of Italy, and the birth of a new nation into the family of Europe. Rome and Venice were yet to be won, but modern methods of government and



"Where'er a noble deed is wrought,
Where'er is spoken a noble thought,
Our hearts in glad surprise, to higher levels rise."

the idea of the rights of kindred peoples to unite into one nation had won a signal victory over the traditions and prejudices of Europe which clung to the institutions and established governments of the past.

Not among the least of the results of the Crimean War was the work of mercy there inaugurated by Florence Nightingale in the fever-smitten camps and hospitals. Out of the confusion which left medicines to spoil in the holds of vessels, or in places where they were not wanted, and provisions where they could not be found to supply the needs of men who were dying from exhaustion, Miss Nightingale brought order and relief, endearing herself to the thousands who came under her ministrations, while in the train of her efforts came ten years later the great work of the Sanitary Commission in the Civil War in America, and in time the wonderful Red Cross organization, which to-day is ready with its relief in all the great emergencies which bring want and suffering.

While Italy was winning her freedom, across the seas in the land whose foundations had been laid in liberty, the air was full of ominous signs of the swift-coming conflict which was to decide the great question whether a free nation could endure as long as it held a great race in personal slavery. All through the fifties the case became more desperate. Slavery was drawing its coils more and more tightly about the life of the Union and seemed to be entrenching itself beyond all possibility of destruction. The Fugitive Slave law compelled the return of negroes found in a free state; the Dred Scott decision made slave-holding possible in any free state; the repeal of the Missouri Compromise led to the bloody warfare over "squatter sovereignty" in Kansas and Nebraska; "Uncle Tom's Cabin" was bringing to thousands of homes a vivid realization of how great were the horrors and perils of slavery, and was adding to the volume of anti-slavery sentiment which was also being swelled by the stirring, appealing messages of the band of New England poets. The older generation of statesmen disposed to compromise with slavery was fast passing, and into their places came men of strong, positive anti-slavery opinions. Dissension grew apace, and the decade closed with Lincoln elected to the presidency, and southern threats of secession becoming realities. The same months that witnessed the birth of a united Italy saw the American union broken.

Yet the struggles, the apparently baffled efforts of the first half century were beginning to bear fruit, for men were learning that liberty could not be won in a single day, but came as the result of obedience to certain fixed laws of progress, and only

"part by part to men revealed
The fulness of her face;"

while the abolition of privateering in war, the deeds of mercy in the army, and the steady progress of anti-slavery sentiment showed a growing spirit of humanity and a sense of the responsibility of man for man.

STUDY OF THE ALCOHOL QUESTION

A series of articles, analyzing the present condition of scientific inquiry concerning the alcohol question, is being issued by this department, under the title of "The Progress of Scientific Inquiry as to the Action of Alcohol on the Human System." The series will take up the points involved in the question, "Is moderate drinking harmful?" and will give the results of accredited original investigations, in the language of the investigators themselves as far as possible, together with the opinions of unbiased specialists. Full references to original literature will also be given. It is urged that all friends of total abstinence unite in giving these leaflets wide distribution. They may be obtained at the National Department of Scientific Temperance Instruction, 23 Trull St., Boston, Mass. Price 35 cts. per hundred.

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Great souls are portions of Eternity;
And every deed which shall outlast Time's span
Must goad the soul to be erect and free."

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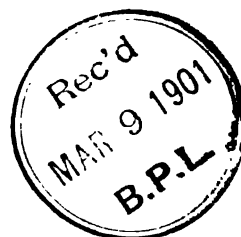
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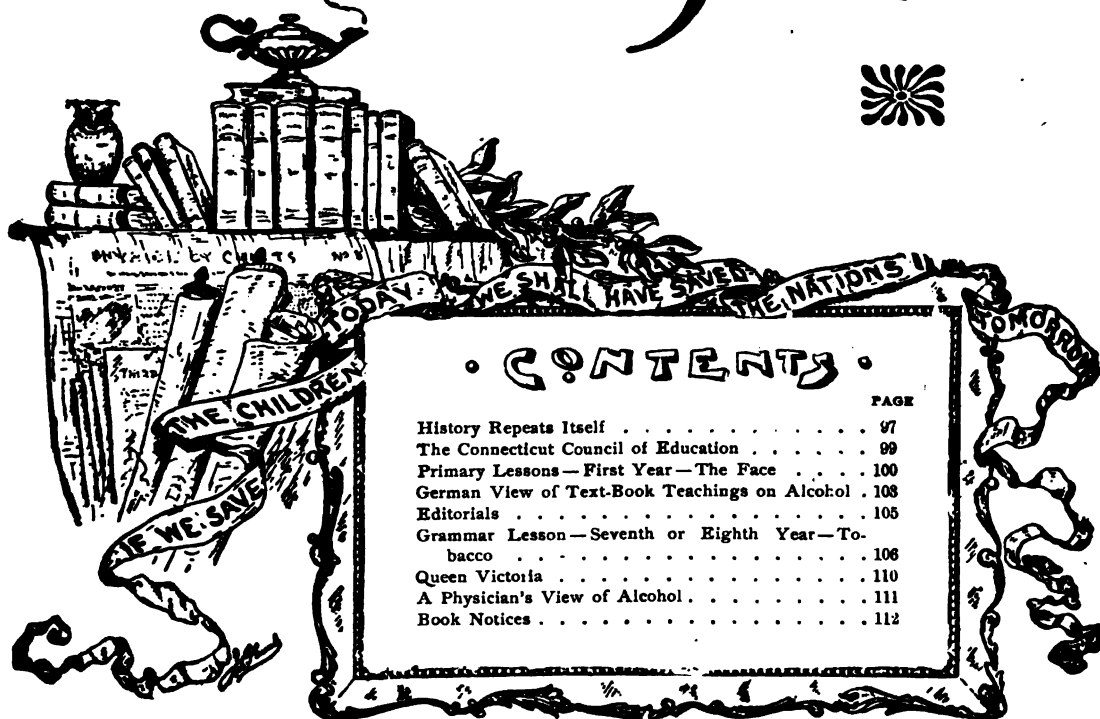
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No. 7.

PUSSY WILLOW

"The brook is brimmed with melting snow,
The maple sap is running,
And on the highest elm a crow
His coal-black wings is sunning.
A close green bud the Mayflower lies
Upon its mossy pillow;
And sweet and low the south wind blows,
And through the brown fields calling goes,
'Come, Pussy! Pussy Willow!
Within your close brown wrapper, stir;
Come out and show your silver fur,
Come, Pussy! Pussy Willow!'"

"Soon red will bud the maple trees,
The bluebirds will be singing,
And yellow tassels in the breeze
Be from the poplars swinging;
And rosy will the Mayflower lie
Upon its mossy pillow;
But you must come the first of all—
'Come, Pussy! is the south wind's call—
'Come, Pussy! Pussy Willow!
A fairy gift to children dear,
The downy firstling of the year—
'Come, Pussy! Pussy Willow!'"

HISTORY REPEATS ITSELF

THAT all persons are entitled to certain inalienable rights, among which are "life, liberty and the pursuit of happiness," and that an infringement of these rights by legalized authority is just cause for rebellion, is the fundamental principle in the Declaration of Independence. In other words, our republic owes its existence, as does progress throughout the world, to the exercise of the right of rebellion against oppression. The oppressed have not always first thought out and formulated a statement of these rights in appropriate phrases, and then sought redress through legal channels. Goaded by suffering, their first resistance has frequently expressed itself in methods as startling as they have been unreasoning, in the frenzied opposition of down-trodden peoples to tyrannies no longer bearable.

The young French girl who, on that cold, rainy morning of October 5, 1789, rushed into a guard-house, and seizing a small drum ran through the streets of Paris, shouting "Bread! Bread!" beating the tambour as she ran, may have known nothing of the theory of inalienable rights, but she personated them, and thousands of women with their hungry children in their

arms rushed to her side, all shouting "Bread! Bread!" Armed with pikes, staves and guns, and reinforced by men with two small cannon, they followed the girl's wild cry which changed to "*A Versailles*" as they rushed on to the doors of the distant palace, the home of a power which had oppressed the people with ruinous taxation and a tyranny appalling to read of, in order to support the luxury of successive infamous courts.

That motley crowd, and the awful scenes of the French Revolution which followed, represented rebellion against centuries of oppression which could no longer be endured. The young French girl who, to the beat of the drum, shouted "Bread! Bread!" could not have devised a constitutional government which would have insured liberty to the people; that came later, the work of another class of minds. But her frenzied cry of rebellion against a tyranny that violated inalienable rights sounded the death knell of monarchical government in France.

Something like this has been a prelude to all great epochs in the progress of human liberty. The Magna Charta from which all constitutional liberty has sprung was wrung from old King John after endurance of long and untold oppression by the people. King John's fear of his armed and rebellious English subjects, who called themselves the "army of God," brought the Magna Charta. The illegal destruction by our fathers of property in tea, shipped under the British flag to which they owed allegiance, expressed their ideas of the right of rebellion against infringement on inalienable rights. John Brown's raid is another instance of rebellion against legalized wrong. "His body lies mouldering in the grave, but his soul is marching on," and on it will march until the inalienable rights of humanity are no longer trodden under foot by greedy and selfish oppressors.

A hospital for pestilential and contagious diseases, placed in a populous community, would be such an infringement upon the inalienable right to life, liberty and pursuit of happiness consequent upon health that the individual who should attempt to put such an institution near the homes of men in city or country would be dealt with as a criminal.

No lazaret house can compare with the open saloon in its destruction to life, liberty and happiness. Alcohol, which is the basis of all liquors the saloon sells, is a poison, an exciting, seductive poison that wins by promising pleas-

ure by the use of a little. But that little has the power to create the uncontrollable appetite for more which destroys the liberty of the drinker, and slowly changes his character as it dulls his brain, blunts his conscience, hardens his heart, destroys his ability and all that makes life worth living, until death ends the tragedy. The life, liberty and pursuit of happiness of not only the drinker but of those allied to him are all involved in the pestilential catastrophies which, in the nature of things, are constantly emanating from the saloon.

Alcohol so quickly destroys the money-earning power of its consumers that to keep up a good paying custom the venders of these beverages must constantly seek new buyers. Hence, by the nature of their business, if it is successful, they become enticers as they prey upon every available new victim, especially from

law-breaker. Mrs. Nation's career concerning this condition of things recalls another mother in Israel who said of punishers of wrong, there were none "until I, Deborah, arose." Time will decide how far the rebellion against the saloon, inaugurated in Kansas, is to spread, and how thoroughly it is to triumph there. This much we know, that both experience and science have proved alcohol an outlaw, ever at war with man's best interests, and its further toleration in this new century is only a question of time.

Men engaged in that dreadful traffic will be financially wise if they seek other business, and those who cater to that power if they are clear-sighted can see even now the mystic words, "Mene, Mene, Tekel, Upharsin" written on the wall over this destroyer of the people.

MARY H. HUNT.



The Palace and Park at Versailles

the ranks of the youth of a community.

There is not a sadder, more heart-rending picture for a Christian woman to face as a part of her personal experience than to see husband or son enticed into these fatal traps which crush the inalienable right of life, liberty and happiness. The aggregated cries of agony of these broken-hearted wives and mothers if they could be sounded in one voice would rend the heavens. It is no wonder, then, that history is repeating itself in Mrs. Nation of Kansas, who is asserting the right of rebellion against this unspeakable oppression which in Kansas is not even a legalized tyranny. Constitutional and statutory law there both forbid the traffic which, it seems, has flaunted unchecked its deadly wares as unblushingly as though it were not a

CORRECT BY COMPARISON

A little boy came home one afternoon and proudly displayed to his mother a merit card.

"Good," said the mother, "how did you get it?"

"I went to the head in nature study."

"Why, nature study at your age? How did it happen?"

"The teacher asked me how many legs a horse has?"

"And what did you say?"

"I said five."

"But my dear child a horse hasn't five legs."

"I know it, mother; but the other boy said six."—*The Educational Gazette*.

THE CONNECTICUT COUNCIL OF EDUCATION

THE well known scholar and philosopher, Joseph Cook, said recently before a Boston audience :

"The victories of the future will belong to those who keep closest to the facts ; but the facts must be all the facts."

No cause, no advocate of a cause can expect to win a victory in these days by distorting, eliminating or suppressing any of the facts that are essential to the right settlement of a question with which he identifies himself. Nor can any man who claims a place in the scientific world hold that place and command confidence in his utterances if he makes mistakes in his marshalling of facts or in his deductions from facts, and persistently clings to these mistakes.

At a recent meeting of the Connecticut Council of Education, Professor Atwater reiterated his former charges against the present temperance instruction in the schools, charges which were based on conclusions drawn from his experiments which have been shown to be untenable by leading medical journals and by well known professors in our medical colleges. Nevertheless, at this Connecticut meeting he again asserted that the indorsed school physiologies are untruthful because they teach that "alcohol is in no sense a food but always a poison." Thus, as a prominent scientist has said of him, "Professor Atwater ignores the scientific testimony against him and goes right on reiterating to the laity his unjustifiable charges."

He has been shown to be incorrect in saying that the doctrine the indorsed physiologies seek to impress upon the minds of the children is that alcohol, even in small quantities, is always harmful and never useful. What these books do emphasize is that alcoholic drinks, even in small quantities, are always dangerous, because alcohol always has the power to create an uncontrollable appetite for more. Whether it may or may not, like opium, chloroform, strychnine and prussic acid, be sometimes useful as a medicine, the school books neither affirm nor deny. They leave that question to medical text-books.

Professor Atwater does not correctly represent the attitude of present scientific investigation of the alcohol question when he says it does not oppose the moderate use of alcoholic beverages. Published reports of hundreds of most exact experiments, some of which have been conducted during the past decade in the most renowned universities of the world, have shown definitely and precisely the injury that alcohol does, though taken in small quantities. In England, we have such men as Dr. Victor Horsley, Professor of Chirurgy in University College, London, an eminent surgeon and brain specialist, saying that total abstinence has a sci-

entific basis. In Austria, we have Professor Kassowitz saying that alcohol is not both a food and a poison, but a poison only ; in Germany, we have Professor Kraepelin saying that the working man strikes down the very source of his power by the habitual moderate use of alcohol ; and, in Russia, we have the recent report of a commission composed of leading scientific men who say, after an exhaustive study of all the evidence up to date, that the opinion often promulgated of the harmlessness of the habitual but moderate use of intoxicating substances must be regarded as completely erroneous.

No man claiming to be a scientist can command confidence in the face of such overwhelming testimony against him unless his own work has been at least free from error. Professor Atwater's work has been convicted of error in most important respects, nevertheless, he continues to make the same unjust criticisms, based on erroneous deductions from his own experiments which did not prove what he claimed for them.

The truth as to the character and effects of alcoholic drinks has ceased to be a matter of opinion and has become one of demonstration of evidence which an intelligent person can weigh for himself. All the question needs for right settlement is careful examination of the evidence and suspension of opinion until it is weighed. The facts are accessible and are constantly accumulating. Their effect in deciding the future sobriety of the people will be, what truth on all matters vital to human destiny has ultimately been, insuppressible, irresistible, and determinative.

HE KNEW WILLIE — "Georgie," said his mother, "I will not whip you this time, if you promise to be a good little boy like Willie Jones." "Mamma," said Georgie, earnestly, "whip me, please."—*Ex.*

HERALDS OF SPRING

Slowly the earth is awaking,
Its pulses beat more strong,
The beauty of spring is breaking
Beneath the bluebirds' song.
The tender twilight is length'ning,
The wind more softly blows,
The fields are changing to verdure,
The brook more swiftly flows.

Sweet, sweet ! the robins are singing,
Swinging 'mid budding trees ;
Spring ! Spring ! the south wind is calling,
As it blows o'er the leas,
With a host of gallant courtiers,
Up through the fields and lanes,
Spring comes in her robes of splendor,
Queen o'er the land she reigns.

—LOUISE LEWIN MATTHEWS.



THE FACE

"A good face is a letter of recommendation."

TO make the face beautiful we must "carve it from within, not dress it from without." Heredity and physical training can do much for the child, but not everything. The finer part of his development must come from the awakening of his mind and soul, and as these higher powers unfold they will be mirrored in his face.

Character, then, is the real secret of human loveliness, and it may reach its greatest perfection in those to whom nature has been apparently most unkind. If we make it the keynote of our work with children their responsive natures will give back the same true ring and unconsciously to themselves they will grow into the likeness of the pattern we have shown.

EXPRESSION OF THE FACE

Choose a bright sunny day to talk about the face, and have green, brown and yellow crayons ready for blackboard use.

Familiarize yourself with the old Greek myth of Clytie, and then tell the children about this fair young maiden who was so fond of the sun that she watched every morning for it to rise, and lovingly followed its course all day long. By and by her own face grew bright and shining, like the beautiful sun she looked at, and one day people found a new flower in the garden. It had a golden fringe around its blossoms and all through the day it kept its face turned towards the sun.

"It is Clytie," they said; "she has changed into a sunflower."

Sketch a sunflower on the board, using the colored crayons, and outline a girl's face inside the yellow rays of the blossom. Make the picture an attractive one and talk about it with the children. Find how many have seen the sunflower. Does it look like a person's face?

Tell how these blossoms turn to keep the sun in sight all through the day until their stalks are too old and stiff to move back and forth.

Let us play we are sunflowers. What kind of faces must we have? Hold up pictures of happy, smiling people. Why do we like to

look at anybody who smiles and looks pleasant when we speak to him? How can we make people glad to look at us?

Help the little ones to understand that no one can have a bright happy face very long unless he feels bright and happy, because the face always shows how one feels. When we are cross or selfish little lines and puckers come into our foreheads and tell the whole story to everybody who sees us.

Read or tell the children about Ernest in Hawthorne's story, "The Great Stone Face." Trace the connection between Ernest's life and the expression he came to wear. Tell them why this plain country lad who stayed quietly at home and had no chance to do great deeds grew to look like the Great Stone Face as he came to manhood. Why was there no such likeness on the faces of the famous general and the man who made money-getting his chief aim in life?

Ask each child to name some one whose face he thinks lovely. Help all to think what makes such a face beautiful. Show pictures of the Sistine Madonna, of Queen Louise of Prussia and of Washington. Why do we like such faces? What do they tell us about the people themselves?

SHAPE OF THE FACE

Have ready a pile of kindergarten blocks and let the children select from it those which are shaped something like a person's face. What do we call this shape?

Name a fruit which is oval shaped. Sketch an egg on the board and ask the children what we call these ovals which we sometimes have for breakfast. Ask them to draw an oval.

Hold up the prettiest picture you can find of a cat. Ask what the shape of its face is. Which one of the blocks is it like?

Name other well known animals and show pictures of each, or outline their faces on the board. Help the children to decide correctly upon the shape of each. How do these faces differ from one another? from people's faces?

Let the children find where the face is the broadest; the narrowest. How shall we hold an egg to have its shape like that of the face?

Hold up an egg with the small end down and ask the children to tell how the oval of the face differs from the shape of the egg. Call their attention to the smooth surface of the egg, the irregular surface of the face. What do we call these different parts of the face? Point to each.

PARTS OF THE FACE

Call attention again to the children's drawings of the oval. In what way do these look like faces? How are they different? What else do they need to make them look right? As the class name the parts of the face show

them on the blackboard how to represent each in their drawings.

Clay for modeling is inexpensive and should be in every primary schoolroom. Wherever it is to be had let the children model the whole head after they can draw the face.

Place the best of their models on a table in front of the class, and ask one after another to point to the parts of the face as you name them. Let them do the same in the case of animals, using casts or pictures as illustrations.

Help them to find likenesses and differences between parts of the face in people and in animals. Call attention to the various ways in which the eyes are placed in animals, the nose, forehead, ears.

Show how the cheeks and mouth differ in the bird, squirrel, horse, cat, fish, and other well known animals; then how these features compare in shape, size and appearance with those of the human face.

USES OF THE DIFFERENT FEATURES

Have the children find the parts of the face which feel hard to the touch; those which feel soft. Tell them that the parts of the body by means of which we think and know what is going on are kept in this oval box which we call the head, and that all the walls of the head must be firm and strong to keep the precious parts within from getting hurt.

Why are the cheeks and lips soft? If the children can not tell, explain that soft parts are needed to cover up the bones and help to make the face attractive. Show that all the hard parts of the face have at least a thin soft covering, and that it is much thicker in some places than in others. Explain why.

Ask the children to find whether the nose is hard or soft. Would it be strong enough to stand out from the face if it were as soft as the cheeks? Show that it does not protect the parts within so much as the forehead does, hence does not need to be quite so hard.

How many doors and windows has the face? Count them. Help the little ones to tell what the eyes are for; the nose; the mouth. Call

attention to the shape of the eye—round, so that it can move easily in any direction. Show how it is protected by the lashes, lids and eyebrows. How does each keep it from harm?

Point out the little partition in the nose, giving us two nostrils to breathe with. How is this a help when we have colds?

What do we find in the mouth? Show how the tongue is a help to us by having the children try to speak or eat without moving it.

An entire lesson should be devoted to the teeth a little later, showing the children how many teeth they have at this age; when and where the first permanent teeth appear; the necessary differences in appearance and use between the front and back teeth; the kinds of food best suited to build up strong, healthy teeth; and the care the teeth need to preserve

them. In connection with a lesson on the face it will suffice to show what the teeth are for; why we have two rows instead of one; and how to keep them clean and white.

Call attention to the covering of the face. What do we call it? Help the children to see how the skin protects and beautifies the face. Compare with that of animals. Show how the faces of animals and all parts of their bodies are kept warm in winter by a covering of hair, because they are often exposed to the cold and can not put on clothes as we can.

CARE OF THE FACE

A child can doubtless be made to keep hands and face clean

if he is continually reminded of his need of soap and water, but there is a better way.

Little children love to play in the dirt and at all proper times they should be so dressed as to allow them to get near to Nature's heart. When play is over, however, the question of cleanliness arises, and here the ingenuity of mother or teacher must come to the front. Present the necessary facts in story form as far as you can, remembering that when the child's interest is awakened he will be less likely to forget them. A busy mother trained her boy and girl to care for their own faces and hands by the story of



"We'll give her a bath, and then she'll be all right."

UNFORTUNATE EVA

Jenny had a large doll for her Christmas one year. It had blue eyes and long golden curls, and Jenny thought her Eva, as she called her, the finest doll in the country.

One day something dreadful happened to Eva. She had been invited to a tea party under the maples, and Jenny forgot to take her home afterward.

By and by Snip, the puppy, came along and, of course, he thought Eva had been left there just for him to play with.

Fortunately, Jenny came to the rescue before any great harm had been done, but poor Eva's face and clothes, too, were badly soiled, and she didn't look at all as if she had just been to a party.

"I'll tell you what to do," said Jenny's brother Scott. "We'll give her a bath, and then she'll be all right. There's a tub of water just around the corner. Bring your other dolls along and we'll clean them all up."

It was great fun. Poor dirty Eva was rubbed and soaked until the dirt was quite gone, then Jenny held her over the tub while Scott rinsed her off with fresh water from the pitcher.

When Eva was quite clean the children left her in her little chair by the fire to dry, and ran off to play.

An hour later mother called them in to see what had happened. The hot stove had been too much for poor Eva. All the pretty color had left her cheeks and eyes and had run down on her clothes. There never was another such a forlorn-looking doll.

Poor Jenny was ready to cry when she saw her, so mother came to the rescue.

"We shall have to send Eva to the hospital," she said, "and I think she'll come back as good as new. But you must keep her away from the fire next time, and clean enough so she won't need washing. If her face should get soiled you can wipe it off gently with a soft cloth without putting it into water."

"Why can't we do that with our faces, too?" asked Scott. "You make us wash them two or three times a day, and I don't see any sense in it."

"Come here and I'll tell you," said his mother. "How do your faces feel when you've been running or playing hard?"

"They are all sweaty," said both children.

"Look through this magnifying-glass at the back of my hand, and you'll see where this sweat, or perspiration, comes from. What do you find?"

"Why, your hand is all full of little holes," said Scott. "Is that the way it is on my face?"

"Yes, these tiny holes or pores are all over the outside of our bodies. They let out some of the waste matter which we ought to get rid of. This is one reason why we need to wash

our faces and hands often, so that these little pores can do their work well. If you keep them choked with dust, by and by you will lose your rosy cheeks and bright complexions just as Eva has, only not for the same reason."

"Well, I don't mind washing up if that is why you make us," said Scott. "I won't grumble about it next time."

Bring a large china doll into class and use as an object lesson to show the children how to wash and dry the face. Have a tiny wash-cloth for them to use as well as soap and water, and let them practice on the doll until they can do it just right, getting no soap into dolly's eyes or mouth, and drying every little corner perfectly with the towel.

Why do we lose our rosy cheeks if we are ill and have to stay in the house? What does the sun do to our hands and faces when we play outdoors every day?

Call attention to the way trees and flowers and grass grow when the sun shines on them, and show that people need sunshine just as much. How shall we leave our bedroom windows at night in order to have pure air to breathe while we are asleep? Why do we need to let the fresh air and sunshine into all our rooms, as well as to be out in it every day? Who can think of the best ways to have a bright, sunny face?

Mamma—"Bessie, how many sisters has your new playmate?" Bessie—"He has one, mamma. He tried to fool me by saying that he had two half-sisters, but he didn't know I've studied arithmetic."—*Union Signal*.

THE WIND'S MESSAGE

Wind in the winter tree

What is the word you bring?

"Listen," the Wind replied,

"Mine is a message dear
Sent to the youthful year
Telling of buds that hide
Waiting the first faint sound
Of a light foot on the ground,
And the call that sets them free;
Telling of birds that await
Close to the southern gate
For the earliest echoing
Of a softly fingered string
On the fairy lute of spring.
This is the word. And see,
Starring the rocky ledge
I set a perfumed pledge."

Thus the Wind answered me.

And lo, a flower at my feet
Suddenly showed; and then

I breathed in the fragrance sweet
And knew it was spring again.

—*Selected*.

GERMAN VIEW OF TEXT-BOOK TEACHINGS ON ALCOHOL

NOW that Professor Atwater is again charging that the indorsed physiologies are inaccurate because they teach total abstinence (see page 99), the following article is most timely in showing that German teachers and scientists are demanding that the text-books in that country which do not teach total abstinence must be revised to teach it in order to be accurate and reliable:

A FALSE ESTIMATION OF ALCOHOLIC DRINKS: A SERIOUS FAULT IN OUR TEXT-BOOKS

From the December number of *Die Enthaltensamkeit*, the official organ of the German Society of Abstinent Teachers.

School text-books can not be scientific works unless their total contents are in harmony with science, and their trend is toward sure conclusions. Small matters, in and of themselves un-

fession will recognize this exceedingly important problem and will enter with full zeal upon its solution. But until then the teacher's opinion of alcohol as a popular drink will be influenced by the current false conceptions, and very materially so by the value placed upon alcoholic drinks in our text-books. These faults are of yet greater importance in the books used by the pupils themselves and for this reason they should be speedily corrected. Failure to do so will not only reveal a critical lack of necessary knowledge but will be a serious trespass upon public welfare.

The following examples are cited to show the erroneous valuation given to alcohol in German school literature:

"Wine and spirits in small doses are an important means of enjoyment and quickly increase activity and working ability. . . . If the poor man uses spirits to increase his working ability, without repairing his bodily



" 'Purr-r-r, perhaps,' said the willow pussies that grew on the buried brook's brink,
'Purr-r-r, perhaps,' said the sleek willow pussies, the spring is more near than you think."

essential, become of much greater importance when they touch upon questions concerning the health and welfare of the people. Here it becomes our unavoidable duty to see that our children are correctly taught, and unquestionably also that our school text-books give adequate treatment to the respective facts.

The use of alcoholic drinks is a matter in which this duty should receive particular attention at present. The incalculable sacrifices exacted by drunkenness are greatly increased by the erroneous current opinion that a moderate use of alcoholic drinks is not only harmless and without danger, but may often be advantageous.

This erroneous opinion has also worked against the schools. It can be only a question of time when the whole German teaching pro-

loss with substantial food, he thereby destroys his body. . . . Beer contains much less alcohol [than spirits] and much more nourishment. The danger, therefore, of the injurious effects of alcohol from the liberal use of beer is not so great as with spirits. The effect of beer is an agreeable invigoration; it quenches thirst, aids digestion, and gently rouses the nerves. When used in excess it is intoxicating."

Alcoholic drinks are indeed an important means of enjoyment but only in a bad sense. In small doses they diminish the physical as well as the mental working ability. The workman can not increase his working ability by alcohol; this has been clearly shown thousands of times, and the injurious action of alcohol on the body will not be repaired by substantial

food. Beer contains a nowise small amount of alcohol. In one liter is about as much as in one-eighth of a liter of brandy, and while on the one hand it contains ten times as much carbohydrates as does brandy, on the other hand there is usually no lack of carbohydrates in the diet of most men. The liberal use of beer, moreover, is no less injurious than spirits. Professor Dr. von Bunge shows that beer is a much more dangerous drink. There is, indeed, no doubt that much more organic disease is caused by beer than by spirits. Furthermore, beer does not quench thirst, but excites to more drinking; it does not aid digestion but hinders it; and finally it does not act healthfully upon the nerves, but encroaches upon them and is the cause of numberless diseases of the nervous system. All this is established upon exact natural science and is besides of great practical importance. There is, therefore, occasion for the sharpest censure when a natural science text-book contains such propositions as are here presented. Other false estimations of alcohol given in various books are:

"Wine and spirits are not food, but used in small doses they stimulate digestion."

"The grape vine is very useful on account of its grapes which furnish the good, beautiful wine."

"Spirits are not to be rejected as a strengthening means."

"Wine rejoices the hearts of men and is the most generous and acceptable drink, and for this reason it is the indispensable offering at feasts. Used moderately and unadulterated it is entirely beneficial for the sick, under some circumstances it is the best physician. Its copious use causes disease."

"Wine is the most generous of drinks that rejoice man, as the Psalmist says, and for that reason it is not omitted at any joyous feast. Used moderately and unadulterated, wine is not injurious to healthy men; to old people it is even very beneficial (milk of old age). Its beneficial action rests upon the fact that if not habitually used it will animate the nerves, strengthen the digestive organs, refresh the weary and sharpen the mental activity. Used in excess it acts directly oppositely, it intoxicates like all spirituous drinks and injures the health."

Here is the same ever recurring, fundamental error, that a moderate use of alcoholic drinks may be accompanied by healthful action. We must emphasize the opposite, that no qualitative difference exists between the action of small and of large doses of alcohol. Large doses cause large injury and small doses small injury; but no one can speak of a beneficial action. As a medicine alcohol has been enormously

overrated and to-day physicians are asking themselves whether alcohol is really needed as a medicine.

What is to be remarked particularly in the above citations concerning alcoholic drinks is not the repetition of old, often refuted errors, but that we must no longer suffer these errors in our school books. We have to present to our youth what science teaches and what promotes public welfare, and both imperatively require that we tear the deceitful mask from the face of alcohol and show it as it is,—a poison. This must be done on stated occasions through instruction, in the first place, but also in all school text-books.*

ORAL TEACHING.—In a small school an inspector was examining a class in geography. He had failed to puzzle the bright youngsters and in despair demanded at last to know what the equator is. There was a momentary pause, and the inspector smiled triumphantly. But the smile had hardly got to its widest limits when a fierce-looking boy with a great shock of tangled hair growled out the answer: "The 'quator," said he, "is a menagerie lion running 'round the earth."—*Ex.*

Dr. Grace Peckham Murray, a well-known and authoritative writer in regard to children's diseases, begins in the March *Delineator* a series of four valuable chapters dealing with The Child. The first article speaks of "The Child at Home." Every mother and teacher should read these articles as they appear.

Love your children and they will love you in spite of all your shortcomings; keep faith with them and they will keep faith with you; treat them courteously and they will be courteous; maintain high ideals and they will follow them; make them the centre of your life and they will make you the centre of their lives.—CAROLINE LESLIE FIELD, in the February *Ladies' Home Journal*.

"Papa," said little four-year-old Margie, "I think you are just the nicest man in the whole world."

"And I think you are the nicest little girl in the world," replied her father.

"Course I am," said Margie. "Isn't it queer how such nice people happened to get into the same family?"—*Union Signal*.

* What these German authorities demand should be taught in their school text-books is exactly what the American indorsed physiologies teach, and yet it is this special feature of their instruction that Professor Atwater has criticised so severely. He denies what German scholars assert, namely, that there is a physiological basis for total abstinence.

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"Hang out your flags, birch and willow!
Shake out your red tassels, larch!
Up, blades of grass from your pillow!
Hear who is calling you — March!"

A SCIENTIFIC BASIS FOR TOTAL ABSTINENCE

IN criticising the character of the temperance instruction given in the public schools, Professor Atwater said, in his Chicago address: "It is neither wise nor just to teach that the doctrine of total abstinence rests upon undisputed principles of either physiology or morals."

If instruction had waited for truth to be "undisputed," progress would still have been in shackles. The findings of science reported by its trustworthy exponents, though these may at first be challenged, have, and from the irrepressible character of truth, ever will have, the final hearing. If there are no physiological reasons for total abstinence then there are no moral reasons for it. For it is not right to oppose alcoholic drinks if alcohol is not by nature a dangerous beverage with power to do great harm.

THE DANGER OF SMALL QUANTITIES

The following statement was signed in 1896 by thirty-five eminent physicians of the United States, as a formula to be taught children and youth in our public schools: —

"Alcohol, like other substances of a narcotic nature, has the power when taken frequently, even in small quantities, to create a diseased appetite for more which may become uncontrollable, and its gratification destructive."

Professor Dr. L. Meyer, of the University of Göttenburg, said: —

"Naturally the lighter alcoholic drinks cultivate a taste for the stronger liquors. Those who make statements in conflict with the indubitable facts of statistics must either be ignorant of these facts, or else they attempt to pervert them in order to apologize for their own habits."

THE EFFECTS OF SMALL QUANTITIES

"The question at issue," Professor Atwater

says in an article on alcohol in the November *Harper's Magazine*, "is its effects when taken in small or moderate quantities."

The eminent Dr. Horsley, Professor of Surgery in University College, London, gave a lecture recently on the effects of small quantities of alcohol on the brain. In closing he said: —

"The contention so often made that small doses of alcohol, such as people take at meals, have practically no deleterious effect can not be maintained." "From the scientific standpoint total abstinence must be the course, if we are to follow the teaching of truth and common sense."

At the Fifth International Congress Against the Abuse of Alcohol, held at Basle, in 1895, Dr. Forel, Professor of Psychiatry at Zurich, Switzerland, said that the researches of Smith and Fürer show that total abstinence rests on an absolutely scientific basis.

In the *Boston Medical and Surgical Journal* of Sept. 6, 1900, Dr. H. F. Hewes, Instructor in Physiological Chemistry in Harvard Medical School, said: —

"The sum total of all the results of alcohol upon the body metabolism certainly inclines the unprejudiced student to agree with Horsley that total abstinence has a scientific basis."

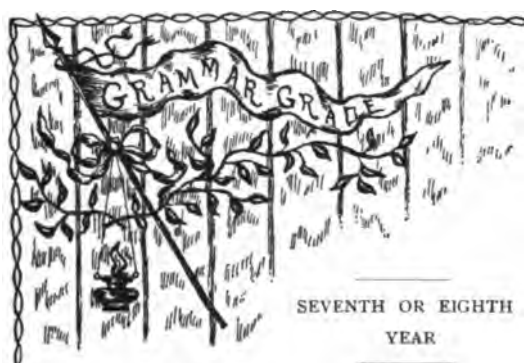
A Russian Commission for the Study of Alcoholism, composed of many eminent physicians, working jointly with representatives of numerous leading scientific societies receiving from the public treasury of Russia an appropriation of 15,000 roubles (\$11,250) has just reported a number of conclusions which are the outcome of their numerous physiological researches and discussions. Among them is the statement that it is impossible to specify how small a drink of alcohol would have no injurious effect. The Commission says:

"The opinion often promulgated concerning the so-called complete harmlessness of the habitual, but moderate consumption of intoxicating substances, must be regarded as completely erroneous. Moreover, no one is able to assume that the man who absorbs alcohol continually will remain within the limits of moderation."

Two years ago the International Congress Against the Abuse of Alcohol changed its title to the International Congress Against the Use of Alcohol.

Said Dr. Koppe, in his recent report to the Russian Commission for the Study of Alcohol, "The abuse of alcohol commences with its use."

The foregoing testimony represents a consensus of expert opinion which abundantly justifies teaching total abstinence from both physiological and moral reasons. No truth new to the public consciousness, especially if it rebukes a popular evil, is ever at first "undisputed"; nevertheless, if it is true, every lover of truth and humanity should be its herald.



TOBACCO

IN the wooded regions of the Alleghanies a hunter once shot a large eagle. Surprised that the king of birds should be such an easy victim, he ran to pick up his prize and found one of the eagle's legs fast in a powerful steel trap. It was evident from the battered condition of the trap that the eagle had struggled long and fiercely to rid himself of his burden, but to no purpose. Although he could still fly, his every movement was hampered by the weight and at last it brought him within range of the hunter's rifle.

It is only occasionally and by accident that bird or beast is thus prevented from living an untrammelled life, but so common has it become for people to bind upon themselves the shackles of a depraved appetite that only the exceptional youth is free to make the most of himself.

"What's the harm in a cigarette now and then?" thinks the schoolboy. "Almost everybody smokes, ministers, doctors, senators, even the President, why can't I?"

This is a question which every teacher must meet fairly and squarely. It is quite true that the tobacco user does not always fall an immediate victim to the deadly nicotine he takes into his system, and may even live to old age if he does not form the habit early in life; it is equally true that the smoker is to be found on every round of the ladder and in every phase of society. Shall we then pronounce tobacco a good thing and urge it upon young people, or passively assent to its use by them?

The teacher who is worthy of her high calling aims to develop character as well as intellect in her pupils. She strives to fit them to live the best lives of which they are capable and to make the most of every power.

She knows that nicotine is a virulent poison, subversive of the physical and mental powers of youth; she knows that reputable business men everywhere are refusing to employ boys who smoke or chew, and because she knows these facts and realizes, as the boy can not, the power of tobacco to clog his life at every turn,

the weight of her influence and teachings are uncompromisingly against its use.

THE NATURE OF TOBACCO

Before pupils can study understandingly the effects of tobacco they must know something of its nature and history. What is tobacco? Where does it come from? What are its properties? Why is it raised? These are all pertinent inquiries, and should be studied in detail. They involve geography, botany, chemistry, commerce, manufacturing and economics. Correlate these branches by assigning the work in special topics. In this way all can be covered and discussed in a single lesson or expanded as time allows. One or more pupils, for instance, may study the characteristics of tobacco as a plant, describing leaf, root, stem and blossom by the aid of illustrative drawings; showing its family and the familiar plants it is allied to; telling about its culture, the soil it thrives in, the care it requires; and explaining how it is gathered and prepared for market. Others may show where it is raised, and its effect on the soil; discuss its commercial value; why its culture is more profitable in some sections than others; and what chemical analysis shows it to consist of. Study the common adulterations of manufactured tobacco. Which of these are harmful substances? Why is not pure tobacco always used? Why is pure tobacco often more harmful than its worst adulterations?

Get together all the books and newspaper clippings you can find to aid the class in working up these topics, and have medical dictionaries and encyclopedias available for their help in studying the chemical nature of tobacco. They probably know already that tobacco contains a poison, but it will mean much more to them to find its deadly nature set forth plainly in the best medical works on narcotics.

EFFECTS OF TOBACCO ON THE BODY

The pyramids of Egypt have stood for ages as the type of enduring workmanship. Have the class compare these structures with some of the flimsy buildings going up to-day. How do the materials differ? the quality of work?

Show that we can not expect to have buildings that will last unless good material is used and the work done in a thorough manner. What material shall we use to build the human body? Study with the class the kinds of food which the body needs; then take up the action of tobacco on bodily structure.

Find how tobacco affects the bony framework which supports the body, as to its size and strength. Compare the stature of those who begin to use tobacco early in life, with that of others who have always let it alone, or who did not smoke or chew until they had reached

manhood. Think of reasons why tobacco dwarfs the body.

Have one section of the class review the work of the brain and nerves in their relation to every part of the body. Ask a second division to show how the nervous system should be treated to fit it for the wear and tear of every day life. The rest of the class may consider how far tobacco would fail to answer the requirements of the nervous system. How would it work positive harm? Study the effects of tobacco upon the circulatory and respiratory organs. What is the "smoker's heart?" Show why it is dangerous. Consider how tobacco can injure the mucous membrane of the nose, throat and bronchial tubes.

Set the class to finding how the special senses are exposed to injury from the use of tobacco. Why is the sense of sight particularly liable to suffer? Take up, similarly, the other organs of the body, discussing the action of tobacco upon each. How does the nature of tobacco explain its uniformly injurious action on all the bodily organs and tissues in youth?

EFFECTS OF TOBACCO ON PHYSICAL ABILITY

In early times when strong walls about a city were thought necessary to defend it from its enemies, Sparta alone built her cities without walls. Then, if visitors wondered at the daring omission, the King would show his splendid army of freemen and say, "These are Sparta's wall, and every man is a brick."

Tell the story of Thermopylæ to show how effective these Spartan walls were in time of war. Have the class find what sort of training these men had in youth to make them sturdy and brave. How would a cigarette smoker of today fail in trying to take the place of one of these heroes? Why is the use of tobacco forbidden football players and all athletes?

Have some one find what tests are required by railway companies of their employees. How does the color test show whether one smokes

cigarettes habitually or not? Name different kinds of work in which either physical strength or skill is necessary. How are cigarettes a bar to success in each?

A Chicago boy confessed that he had just applied for work in ten places and each time he was asked if he smoked cigarettes. Why did his affirmative answer keep him from being employed by any of these men? Name all the ways in which a boy's physical ability is weakened or entirely lost by the use of tobacco.

EFFECTS OF TOBACCO ON MENTAL ABILITY

The School Board of a California town found that the boys in their public schools ranked far below the girls in every study, and investigation showed that ninety per cent. of the boys between the ages of twelve and fifteen smoked cigarettes. The same condition exists in other towns, and always with like results.

Why are such boys not so bright as girls? Why do they drop behind in their school work?

Review with your class the action of tobacco upon the nervous system until they see why young people can not use this narcotic without a distinct loss in mental power. How does this loss show itself in school? in business? in the every day life of the young smoker? Call for a list of the different kinds of work which can not be well

done unless one has a clear head and the ability to think quickly and correctly. Have the class ascertain by actual experiment how many employers they can find who are willing to give any kind of brain work to boys who are habitual cigarette smokers. What per cent. are unwilling? Why should this habit make any difference?

EFFECTS OF TOBACCO ON CHARACTER

Bring out the fact that, in order to be of real service to us, the brain must rightly interpret whatever affects the nerves. An astronomer once thought he had found a new spot on the



Perched on the bare brown branches, the birds in chorus sing, Till Cupid says they're ready for concerts in the spring.

... was that a ... of his tele- ... a similar ... measure or ability ... It can make ... when he is ... make him will- ... otherwise would ... makes him waste- ... some time that it is ... ability; it renders ... personal appearance, slow- ... and manners, coarse in lan- ... towards the feelings of others. ... ways in which the morals ... lowered by the persistent use ... illustrate each by incidents from ... of course, and explain to ... that these effects are due to the poi- ... of the nicotine it contains; that ... has the power to so blunt and in- ... that these can no longer convey ... impressions to the brain or incite the ... to right action.

Tell the story of the passenger in a sailing vessel who cut a hole in the ship's side. When remonstrated with he calmly answered: "What difference does it make to you? The hole is under my own berth."

Call for instances showing that the effects of tobacco are never confined to the user. Others must breathe a polluted air and run the risk of soiled clothing whenever any one smokes or chews. Streets, offices, public halls, and often the home itself are rendered indescribably filthy in order that tobacco users may gratify a depraved appetite. Worse than all, the inheritance of a sickly body and feeble intellect are handed down to innocent children because one or both parents have been habitual users of this narcotic. This last fact should not be omitted or lost sight of in any study of the effects of tobacco. Some day the majority of your pupils will have boys and girls of their own and it rests with them, as parents of the future, to transmit health and energy and mental power to their descendants, instead of burdening them with the sins of their fathers.

AUTHORITATIVE QUOTATIONS

TOBACCO DEMORALIZES THE NERVOUS SYSTEM

Smoking has a bad effect upon the nervous system. The effect may appear to be soothing or even stimulating for the time, but it ends by making the person irritable. Any boy who smokes before the age of twenty-one runs the risk of growing up with a poor brain and nervous system.—H. F. HEWES, M.D., Harvard University.

TOBACCO CREATES AN APPETITE FOR ITSELF

There are enough authorities showing the ir-

reparable injury of tobacco to the brain, as well as to the body, to fill a volume. Besides the weakening effect on the brain and nerves themselves, there comes a loud call from this diseased condition for a repetition of the dose, and the system continually grows weaker until at last there is no vitality to respond.—C. H. SHEPARD, M.D., Brooklyn.

NICOTINE WEAKENS THE STRUCTURE OF THE HEART

What is of most importance in connection with dilated heart is the direct toxic action of nicotine on the heart muscle, similar to that produced by alcohol, if present in sufficient amount.—*London Lancet*.

TOBACCO DERANGES THE HEART'S ACTION

The pulse of every habitual user of tobacco will show irregularities in the heart's action. Tobacco users frequently suffer with palpitation, angina pectoris and other symptoms of derangement of this organ. About one-fourth of those who smoke have narcotism of the heart.

W. H. RILEY, M.D., Supt. Colo. Sanitarium.

TOBACCO HINDERS ALL DEVELOPMENT

The constant use of tobacco in any form will produce functional derangement of the digestive, circulatory, and nervous systems, producing headache, confusion of intellect, loss of memory, dullness, stupor and indisposition to muscular or mental labor. No man who becomes a slave to tobacco ever has reached his best, mentally, morally or physically, or ever will.

C. H. ST. JOHN, Ph.B., D.D., M.D.

TOBACCO INJURES THE SIGHT

The use of tobacco is a frequent cause of color-blindness. The irritating action of tobacco smoke causes haziness, and sometimes produces a total loss of sight. Tobacco sometimes produces a wasting away of the optic nerve, and this leads, sooner or later, to partial or total blindness.—W. E. BALDWIN, M.D.

CIGARETTE SMOKING PERVERTS MORALS

Cigarette smoking first blunts the whole moral nature. It has an appalling effect upon the physical system as well. I have seen bright boys turned into dunces, and straightforward, honest boys made into miserable cowards by it.

A. C. CLINTON, M.D., San Francisco.

TOBACCO INTERFERES WITH NEARLY EVERY FUNCTION OF THE BODY

The use of tobacco by youth can never be regarded as moderate. Its effects, even when but little indulged in are those which characterize excess in adults. The depressing effect of tobacco upon growth by diminishing the forces concerned in tissue changes, its effect upon the heart and pulsation, the disturbance of muscular, co-ordinate power, of ability to

concentrate the mind upon study, the dyspeptic troubles, impairment of vision and headache are conceded by most observers and clearly demonstrated by many. — A. C. GORGUS, M.D., Medical Inspector U. S. N.

TOBACCO LESSENS WORKING ABILITY

While tobacco is injurious to every one it is far more harmful to those who are growing. A boy who uses tobacco can never have the strength of body or the vigor of mind he would have had except for its use. Boys and young men entering the employ of a great business house or a corporation where their success depends upon strength, alertness, skill and accuracy, as well as integrity and industry, would surely reach a much higher success if they abstained totally from all narcotics.

WINFIELD S. HALL, Ph.D., M.D.,
Northwestern Univ. Med. School.

O, March that blusters, and March that blows,
What color under your footsteps glows;
Beauty you summon from winter's snows,
And you are the pathway that leads to the rose.

CELIA THAXTER.

AN AWFUL RISK

Diphtheria has been epidemic in the mission, and little Freddie was repeatedly warned by his mother that he must not play near the house that had the blue placard on it, for fear he would contract the disease and die. Freddie became thoroughly imbued with the idea that diphtheria was about the most terrible thing that could happen to a small boy.

The other day he ran away from home, and when his mother finally found him she informed him that he was going to get whipped when he got home.

"How are you going to whip me, mamma?" he inquired dolefully.

"I am going to spank you with the hair brush."

After meditating some little time he said:

"Mamma, I want to talk to you."

"I don't want to talk to you, you bad boy, I'm going to whip you."

There was silence for a few minutes, and Freddie repeated very pleadingly:

"Mamma, I want to talk to you."

"Well, what do you want to say?"

"Well—mamma," he sobbed, "once there was—a little boy—and—and—and his mother spanked him with the hair brush—and—and it gave him diphtheria."

The mother felt that she could not run any such terrible risk—and Freddie escaped.—*San Francisco Post.*

POST OFFICE BARS CIGARETTES

At a conference of the Chicago post office authorities it was decided hereafter to employ no boy who smokes cigarettes or who is known to have once been addicted to the habit.

Heretofore, there has been a rule in force that boys employed by the office could not smoke while working, but believing that smoking has a demoralizing effect, and because of the need of the most intelligent and active boys, it is thought wise to make closer restrictions.

An examination is soon to be held, when seven hundred youths will enter into competition for positions in the post office, and the new order will have no small effect upon so large a number of applicants.

The clause relating to cigarettes says: "No small boys will be allowed to participate in the examination, since only the best equipped boys mentally and physically are wanted in this service, and under no circumstances will a boy who smokes cigarettes be employed." The service referred to is that of special delivery messenger, for which appointments are made from this examination.—*Pacific Ensign.*

The *Youth's Companion* tells of a young man who failed to pass an examination for a government position. He had influence in the way of a senator who took him to Secretary Long to see if anything could be done to re-rate his grades and get him in. "It's no use," said Secretary Long, "that young man has failed three times. Look at his fingers; that yellow stain indicates that he is a cigarette smoker and as such would never do the work required of him."

THE BOY AND THE CIGARETTE

It is possible that the refusal of merchants, manufacturers, and professional men to employ boys addicted to the cigarette habit will do more to check the evil than all the laws ever passed or planned. When a boy knows that his future chance to earn a livelihood depends on his quitting the ill-smelling cigarette, the knowledge will doubtless have more effect on him than a dozen parents' or pedagogues' lectures on the subject. The beauty of the thing is that no manner of deceit will avail, for the cigarette-smoking boy carries the literal sign manual of his vice on his fingers. A Chicago boy confessed last week that out of ten places to which he had applied for work the head of not one had neglected to ask him if he smoked cigarettes. In a number of instances he was made to show his fingers.—*Chicago Tribune.*

"Already the feet of the winter fly,

And the pulse of the earth begins to leap,

Waking up from her frozen sleep,

And knowing the beautiful spring is nigh."

QUEEN VICTORIA

A TRULY successful ruler must have the quality of self-abnegation. The well-being of his people, not personal glory or selfish emolument, must stand first.

Few of the personal governments of men have been successful, because self-abnegation is not natural to man. The pages of history are blackened by the stories of bloody wars in which thousands have perished to gratify the selfish ambitions of monarchs.

Self-abnegation is an essential characteristic of motherhood. We women lay down at the cradle our youth, our beauty, our love of ease, tastes and ambitions, a glad, willing tribute to the little bit of humanity there. We can not help it.

You say such instinctive self-abnegation is God's providence for the child. Was it not God's providence for Great Britain and the world she has influenced that this most womanly of women, this most madonna-hearted of mothers, Alexandrina Victoria came to the throne of England at just the time she did? The moral tone of the courts that preceded her reign had shocked the awakening conscience of England, at that time torn with the contentions of great political parties. "Social discontent prevailed everywhere," says a historian of that period. The Duke of Wellington thought the young Queen might purify the atmosphere of the court, but "the Tories will never have any chance with a young woman as sovereign," he said, "for I have no small talk and Peel has no manners." It evidently did not occur to him to think that a woman could be capable of as sound a constitutional policy, and able to show as small regard for personal predilections as a man, but he learned better as he watched Queen Victoria's reign.

The fear that the advice of frivolous men in power would warp her judgment was soon dissipated by the discovery that this young woman had strong, clear sense enough of her own not to be absolutely dependent upon counsel.

Others have spoken of the Queen's ideal domestic life, of her character as a loving, loyal wife and devoted mother, but the side of her remarkable career that needs presenting as well, is that very womanliness and motherliness expressed in public affairs. It is these qualities shown in a broad arena which have made the life now closed most regal. The true woman and loving mother is a queen in her home, but her care concerning the influences that may shape the lives of her sons and daughters is not alone confined within the four walls that may encompass that home. She prays for and works for such administration of outside affairs as will constitute safe social conditions for her children.

The maternal instinct of preservation of the

child from moral contamination is one of the great conservators of civilization. The world is progressing in its realization of the value and need of this quality of motherliness in public affairs. What a loss it would have been to Britain and to the world if this grandchild of George III. had been, instead of that sweet young girl, a male heir like his two sons who reigned before Victoria! What a lofty example of pure domestic life, of true womanliness in the administration of the home and of the affairs of a great nation the world would have missed!

The life and reign of the dead Queen will be forever a refutation of the false notion that woman is incapable of comprehending public affairs and of acting wisely in their administration, and that if she attempts it it will be at the sacrifice of home qualities.

Queen Victoria was a statesman in the generic sense of that term. She not only loved her people but knew them. She understood her times. Familiar with every page of history and comprehending its philosophy, she knew that oppression has been and is always self-destructive. Thus from knowledge as well as from instinct she was a liberal ruler. While her predecessors had often dismissed their ministers at will, Victoria is said to have been the first really constitutional monarch England has ever had. It means much for the motherland that the new King, Edward VII., promises to walk in the footsteps of his mother, and declares that he too is resolved to act as a constitutional monarch.

Although ancestors of mine came to this country on the Mayflower, because of the ecclesiastical tyranny of James I., although there is running in my veins the blood of men who from the pulpits of this section of Massachusetts roused the people to the war of the Revolution and fought in its battles, nevertheless my heart throbs with sympathy at the sight of these two flags side by side on the walls of this church, the one the Union Jack, and the other the Stars and Stripes, and both draped with crape.

Both nations here represented by these emblems are most deeply bereaved. Our mother country has lost a great and wise ruler and we a real friend who proved herself such in our hour of sore need.

In 1861 our beloved republic was threatened with dismemberment, in order that a new nation might come into existence founded on that sum of all villainies, human chattel slavery. Lord Russell's letters from this country to London, sided with the South, and Lord Palmerston, at a public dinner, sneered at our first Bull Run defeat. Then trouble arose between England and the United States over the Mason and Slidell affair, and we might have had two wars at once on our hands, one within our own

borders and the other with England, had not Queen Victoria, with her own pen, so modified the letter of her minister to our government as to render it pacific instead of inflammatory.

God bless the memory of this glorious Queen! We shall ever love and revere her name. She had the qualities of truest statesmanship. She knew that the hearthstone is the cornerstone of national strength, that the home where one man is loyal to one true wife, the mother of his children and sharer of his joys and sorrows, is a domestic condition which differentiates a civilized people from savages; hence no sin against such home conditions, no violation of the purity of individual or domestic life was sanctioned by her court. She not only represented in her own life, but ever exacted from others, that virtue which is the strength of a nation.

The daughter of a long line of kings, this regal sovereign of Great Britain and Ireland and Empress of India knew that hers were but passing titles, that she must soon leave all pomp and pageantry of earthly royalty and go to give an account of her stewardship to the King of Kings. With this fact ever before her she has led the truest of all lives, that of a follower of the glorified Nazarene, whose "Well done, good and faithful servant!" must have been more welcome than all the many acclaims she has heard during her long earthly reign.

MARY H. HUNT.

From an address delivered Jan. 27, 1901, in Pilgrim Congregational Church, Boston, Mass.

MARCH WINDS

Blow, blow, March winds, blow!

Blow us April if you please.

Blow away the cold, white snow,

Blow the leaves out on the trees.

Blow the ice from off the brooks,

Set their merry water free.

Blow dead leaves from woodsy nooks,

Show the violets to me.

Do all this; t'will be but play;

Then—please to blow yourself away!

—St. Nicholas.

A PHYSICIAN'S VIEW OF ALCOHOL

THE medical profession is by no means unanimous in considering Professor Atwater's experiments as conclusively demonstrating alcohol to be a food. It is true that many physicians still accept the old teaching that alcohol is a panacea for all ills, and in a blind, unreasoning manner prescribe it as a food, a drink, a sleeping potion, an anodyne, a narcotic, a stimulant, a tonic, a calorific, and a febrifuge. By such professional men, especially if they have themselves acquired the drink habit, the experiments of Professor Atwater are considered conclusive, although but few of them have ever studied the methods by

which he obtained his deductions. To those physicians, however, who have investigated the subject carefully and prayerfully, because of the wide-reaching injury to youth which misjudgment might inflict, Professor Atwater's reasoning proves entirely fallacious.

Were we to accept it as proved that alcohol is, to a certain extent, consumed within the human body and converted into heat and force, this does not make of it a food in that practical sense in which we expect children to accept the rest of the teaching in their physiologies. It is no more, for this reason, a food than are opium, chloral, cocaine, cannabis indica, tobacco and other narcotic poisons

of that class; while, like them, it is capable of inducing a series of wide-reaching injuries both to health and morals. In my opinion alcohol is in no sense a food. It is not a true stimulant nor is it a tonic. It is a narcotic irritant poison, the narcotic power of which is too feeble and too dependent upon personal idiosyncrasies to render its administration reliable, either to relieve pain or to cause sleep. Thus, the same dose of alcohol which makes one patient partially insensible to the knife renders the anguish of another more acute and uncontrollable. The amount required to cause sleep in one as often produces restless wakefulness in another. It is in no sense a tonic, as it invariably depresses and enervates. Nerve tone is replaced by nervous



King Edward VII.

irritability; true muscular energy is lost and its place taken by the delusive appearance of strength which a partial anæsthesia produces. The direct action of alcohol upon the stomach secretion is that of an irritant, and as such it increases temporarily the flow of gastric juice like the condiments mustard and pepper. It produces, however, as do these condiments, gastric irritation, and also an injurious influence upon digestion peculiar to itself. It very commonly nauseates and increases anorexia except in those cases habituated either by heredity or personal acquirement to its employment. It is in no way a true stimulant. The supposition that it is such is largely based upon the fact that in a certain number of cases moderate but concentrated doses of alcohol will, through irritation of those terminal filaments of the vagus which are supplied to the stomach, act reflexly upon those supplied to the heart and produce a transient bounding of the pulse. More often, however, unless the patient has become tolerant by its habitual employment, this irritation of the stomach mucous membrane is productive immediately of nausea and enfeebled and rapid heart action, only partially recovered by emesis. It increases the depression and retards reaction.

In a large surgical hospital, and extensive general and consulting practice, I have learned for a number of years to shun its administration utterly, finding it invariably injurious in all conditions of disease and injury, never acting as a food but always as a poison. Thus, in four hundred operations performed by me from June 1, 1898, to June 1, 1899, of which by far the greater number were of the gravest nature, there was a mortality of but one per cent, a most striking contrast to the results obtained with the same class of cases by equally skillful operators who employed alcoholic medication. The same was found true of my typhoid and other fever cases in which, during the earlier days of my practice, I was deluded into supposing alcohol to be a food and a tonic.

I believe Professor Atwater's conclusions to have been biased by preconceived ideas, and that his opinions should have no place in influencing the temperance teaching in our public schools. I earnestly hope, therefore, that no alteration will be made in the present teaching concerning the injurious action of alcohol as set forth in our indorsed school physiologies.

EVAN O'NEILL KANE, M.D.

Kane, Pa.

"O, violets hiding in the green,
O, violets sweet and shy
You have the sweetness of the earth,
The beauty of the sky,
No blossom fairer blows,
Till summer brings her rose."

BOOK NOTICES

GEOGRAPHY IN THE ELEMENTARY SCHOOLS

THIS pamphlet by W. T. Harris, United States Commissioner of Education, gives in a nutshell the relation of geography to other branches in elementary school work. First of all it cultivates the child's power of observation and helps him to substitute thought for fancy, but its greatest advantage lies in the fact that it is a many-sided study. The child's interests are in every direction but he is unable to concentrate his mind long on any one. Because geography is a conglomerate of sciences, it appeals to each of these interests in turn and helps to bind them into one harmonious whole. The busy teacher, who is trying to correlate to best advantage the many subjects included in the course, will find Dr. Harris' suggestions especially helpful.

THE CHILDHOOD OF JI-SHIE THE OJIBWA, by Albert Ernest Jenks, Ph.D. Published by *The American Thresherman*, Madison, Wisconsin. Price \$1.00.

A charming little book of Indian life and thought, illustrated by sixty-four pen sketches. Dr. Jenks gives in prose what Longfellow has so admirably done in poetry, the free, outdoor life of an Indian boy, with its picturesque setting of lake and forest, and its intimate knowledge of birds and animals. The customs of the Ojibwas are faithfully preserved and presented from the Indian's own standpoint. We see the poetry and the stern hardships of his existence as he saw them, and read this chapter from the earlier history of our country without prejudice. The book is admirably adapted for supplementary reading in primary classes.

CONDENSED GUIDE TO THE BRUSSELS CHARITIES, edited by Edward Belleruche, formerly Hon. Secretary of the Belgian Benevolent Society of London. Street beggars are so much more common in Europe than in our own country that the traveler feels almost obliged to give alms to some of them. M. Belleruche's *Guide* is published to warn against such mistaken kindness, at least without careful investigation, and to refer the charitably minded to those organizations whose special mission it is to ascertain where help is really needed. Such work is worthy of all assistance and we cordially commend its aim. Attention is also called in the pamphlet to the need of vigorous temperance work in Belgium, notwithstanding the temperance societies and leagues which already exist. Leading women, among them the wife of the Belgian Minister of State and Senator, are interesting themselves in the matter, and there is hope that the children will soon receive necessary instruction in this most vital of subjects.

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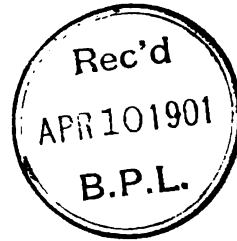
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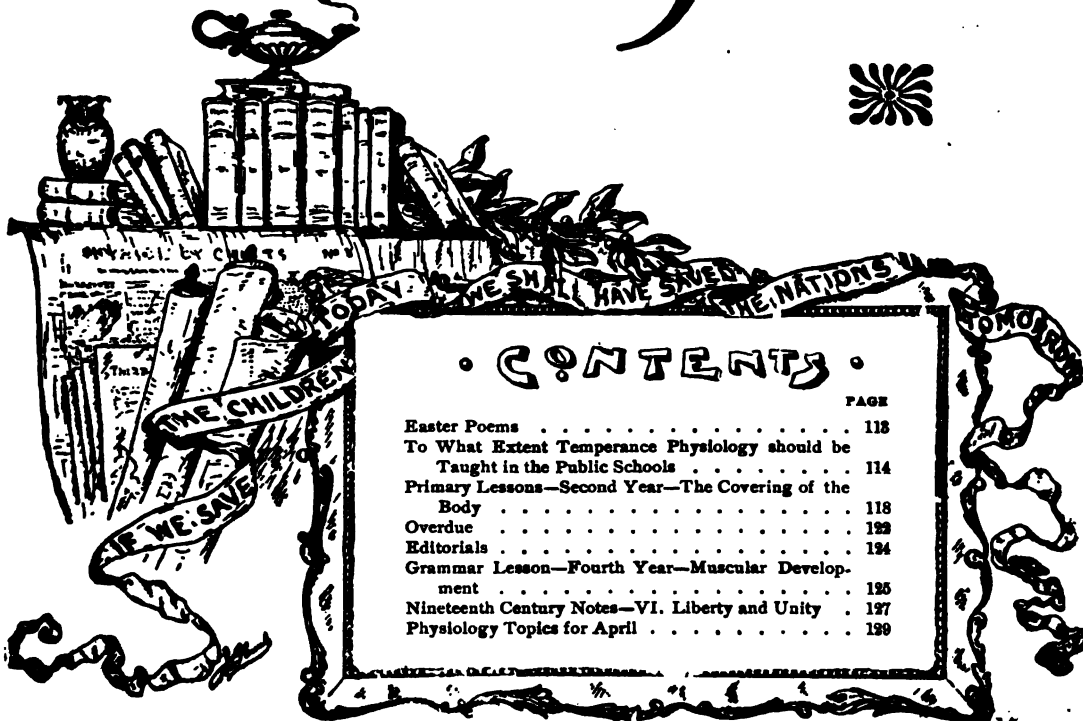
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THE SCHOOL PHYSIOLOGY JOURNAL



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BOSTON, APRIL, 1901.

No. 8.

THE EASTER MESSAGE

When the maple twigs are blushing, and the
birch-bud shyly swells,
And the hylas pipe in chorus like a string of
silver bells;
When the first ecstatic robin, truant from his
wiser kin,
In the gray and dripping orchard tunes his
lusty violin,
Something steals upon my
spirit — something sweet I
can not name —
Like a heart-beat faintly puls-
ing from the birth-world
whence I came.

Such a mystical, sweet prom-
ise, when the wind blows
from the south,
And a bird is in the orchard
with God's greeting in his
mouth!
Have I fainted, have I doubt-
ed, in the days that are
gone by?
Have I said, "There is no
rising unto mortals when
they die?"
It is past, that blind self-
wounding! I have heard
the robin sing,
I have caught the Easter
message in the first breath
of the spring.

—*Harper's Bazar.*

"My name is April, sir; and I
Often laugh, as often cry."

SPRING

The Spring reveals herself in
secret only,
Through hidden signs we
guess her mystic power.
The fields are bare, the wood-
lands wild and lonely,
But, lo! beneath the earth
she hides the flower.

The willows quicken at the river's brim,
The eager alder breaks her tiny buds,
The upland hills are wrapt in hazes dim,
And sweet, impulsive life has stirred the
woods.—DORA REED GOODALE.

A CORONATION

From earthy coverts where I slept
The sunlight summoned me;
To root and bole and bough I crept,
And bloomed on every tree.

In windless places warm with sun,
Despite the lingering snow,
To speak my monarchy begun
I bade the violets blow.

Then, while I wavered in the
stress
That wintry winds had
shown,
The bluebird's sweet per-
suasiveness
Confirmed me on my throne.
R. G. WELSH.

"Music is in all growing things;
Earth's silence lives, and
throbs, and sings."

THE FLOCKS OF SPRING

When winter is done, and
April's dawning
Shatters the dark of the
year,
And the rain-fed rivulet under
the bridge
Again runs clear,

And the shepherd sun comes
o'er the hill
To let out the flocks of
spring,
With laughter and light in
the pastures of air
The flocks take wing.

They scatter on every linger-
ing wind —
The perfume, and the bee,
And the whispers of the jost-
ling grass,
Glad to be free;

The minstrelsy of the shining pools,
The dancing troops of the hours,
And over the sod in a sudden rapture
Flame the flowers.

CHAS. G. D. ROBERTS in *Munsey*.



HOPE

From a Copley Print, copyright 1899,
by Curtis & Cameron.

AN APRIL DAY

We knew it would rain, for all the morn
A spirit on slender ropes of mist
Was lowering his golden buckets down
Into the vapory amethyst,

On marshes and swamps and dismal fens,
Scooping the dew that lay on the flowers,
Dipping the jewels out of the sea,
To sprinkle them over the land in showers.

We knew it would rain, for the poplars showed
The white of their leaves, the amber grain
Shrank in the wind—and the lightning now
Is tangled in tremulous skeins of rain!

—THOMAS BAILEY ALDRICH.

TO WHAT EXTENT TEMPERANCE
PHYSIOLOGY SHOULD BE TAUGHT
IN THE PUBLIC SCHOOLS

DANIEL WEBSTER, in one of his famous speeches, said:

"Our expectation of the duration of our system of government rests on the trust that by the diffusion of knowledge and virtuous sentiments the political fabric may be secure, as well against open violence and overthrow as against the slow but sure undermining of lawlessness." "It is the undoubted right and bounden duty of government to provide for the instruction of all youth." "For the purpose of public instruction we hold every man subject to taxation in proportion to his property. We regard this as a wise and liberal system of police for the safety of property, life, and public peace."

During the eighty-one years since these fundamental truths were uttered, and especially since the abolition of slavery in the South, they have become the settled policy of our entire nation, and the course of study in our public schools has been widened to include such studies as individual and public good have called for. The branch to which this article refers has been added for the following reasons:

WHY PHYSIOLOGICAL TEMPERANCE IS A MANDATORY
STUDY IN THE UNITED STATES

The use of alcoholic drinks and other narcotics is found to be a prolific cause of crime, poverty, misery, madness, progressive degeneration, a menace to individual well-being and consequently to the state. Furthermore, universal misapprehension as to the laws of health, especially those which relate to the dangerous character and consequent effects of alcoholic drinks, is seen to be a cause that has led to the destructive use of these beverages.

Here, then, is a clear case for that diffusion of knowledge and virtuous sentiments on which Webster says the perpetuity of our republic

rests. The modern statesman as well as philanthropists realize that a republic can not abolish an evil, no matter how dangerous it may be to the public welfare, until a majority of the people want it prohibited. It has no power with which it can compel majorities, for majorities make the laws. In that sense it can not go in advance of public opinion. But a government of the people can provide for such education of public opinion as will lead majorities voluntarily to banish a wrong that imperils the individual and society, and it is its duty to do so. Therefore Congress, and the legislatures of every state in the Union but one (and that one soon will), have enacted laws making the nature and effects of alcoholic drinks and other narcotics, in connection with physiology and hygiene, a mandatory public school study.

WHY FOR ALL PUPILS

Nearly all the states, and Congress for all schools under Federal control, require this branch to be taught and studied by "all pupils in all schools." The reason for this is self-evident. It is the object of this temperance education legislation, which is now national, to ensure that the schools shall teach all the future men and women of this country, with other laws of health, the dangerous character and effects of alcoholic drinks and other narcotics, and to provide that such instruction, by beginning before appetite for these substances is formed, shall be in reality preventive.

WHEN AND WHERE THIS STUDY MUST BE PURSUED
IN TIME TO SHAPE HABITS

The latest report of Dr. W. T. Harris, National Commissioner of Education, states that in 1899 the average time during which children in this country remained in school was not quite five years (4.96). The average age in the North Atlantic states was a little less than six and three-quarters years (6.70).^{*} If six and three-quarters years is the highest average, then a considerable proportion must get less than six and three-quarters years, for a goodly number of pupils pass up through the grades above the sixth, and some take the entire thirteen years' course. Those who go into the seventh and higher grades would raise the average above six and three-quarters years if a larger proportion of the children did not have less than this number of years in school. Therefore, according to Dr. Harris' figures, if the study is excluded from the lower grades many children will fail to get any instruction in this subject, because they will have dropped out of school before they reach it.

The fact that compulsory attendance laws in

^{*} Page XIV. of the Report of the Commissioner of Education, 1898-99.

some of the North Atlantic states may ensure that a larger number of pupils reach grades higher than Dr. Harris' figures imply would not ensure that wrong hygienic habits, including cigarette-smoking, cider and beer tippling, may not have been formed before the sixth or seventh years are reached. The task in the case of such pupils would become the difficult, sometimes impossible, one of reformation rather than the hopeful work of prevention through education.

CHILDREN IN THE PRIMARY GRADES

This instruction is needed in the primary years, even for those who remain longest in school, to guide constantly forming habits and to create aversion for wrong habits during these most impressive years of child life. "Most of the cigarette smokers in my schools," writes a superintendent, "are in the fourth and fifth years." Faithful instruction through the primary grades, and continued in succeeding years might have prevented this state of affairs.

Even in the states with the highest educational ranking some children leave school at the expiration of the third year. If instruction in physiological temperance is excluded from the first three primary years this class will receive no instruction at all on that subject.

Such children are often from homes where there is little either of temperance teaching or of example. Children of the immigrant are often among these. To deprive them of this school instruction is a wrong to them and a menace to the public. We tempt with the open saloon these people who have come to America as to the land of hope. In addition, to shut off from their children in these primary years the instruction of the school against what the saloon has to sell would be a double wrong which would come back to smite us as these children become a part of this government of the people. To take oral instruction in temperance physiology out of the three primary public school years, where of course instruction must be oral, is to provide for the perpetuity of a slum class to be the slaves of alcohol, narcotics and kindred vices, and a consequent peril to society.

THE FOURTH YEAR PUPIL

Throughout the country regular text-book instruction in other studies, like arithmetic and geography, ordinarily begins in the fourth year of school life. Why should it not in this study? There are important truths to be learned on this subject which relate to the pupil's physical, mental and moral development. The fourth year pupil comes up from the primary with a sense of growth that resents what he terms baby methods. He wants a book because older pupils have a book for a study that means anything, and he should have a book. He is old

enough to take in by the eye gate what he reads in the text, as well as through the ear gate what the teacher says. Neither he nor the fifth or sixth year pupil is very responsive to mere exhortation. They do not like to be preached at. Truth put into language they can understand, found in their text-books, illustrated by the teacher may be impressed by her with permanent moral effect because they can understand the reason for it. This is a critical year for the child, when careful instruction that respects his consciousness of his own development may save him from temptations which closely beset him at this age. No subject which the school teaches is of more importance to the pupil than that of modern hygiene, including the nature and effects of alcohol and other narcotics, because it touches life, health and constantly forming habits. If we were sure that all the children would remain in school up to and during the higher school years, and that before that time they would form no unhygienic habits, including those that relate to alcohol and tobacco; that their minds on these subjects would remain a perfect blank until the time we were ready to give the instruction; that they would possess no inherited tendencies which should be warned against, or be surrounded by no temptations, the question of the time for the introduction of this study would be unimportant. But with life and its environments what they are to-day, to take graded text-book instruction on this topic from pupils of the fourth year is to do them an irreparable wrong.

METHODS ARE LEFT TO THE TEACHER

A text-book in the hands of the pupil where other branches are thus studied is only *one* source of information, and does not, as has been claimed, limit the teacher to any special method, inductive, deductive, objective, illustrative or experimental. She may teach by any method she chooses. The book helps a poor teacher and her pupils, especially in a subject in which she has had no training, as is often the case in this one. The good teacher shows the pupil how to use any book in such a way as to get the best from it. Thorough, systematic study of this branch in grades above the primary calls for text-books in the hands of the pupils.

Keep definite text-book instruction on this subject out of the public schools until some of the pupils have left school, and until many of those who go into the upper grades have a cigarette, cider or beer-drinking liking already established, and the saloon will have as its allies, to vote for and support it, those who were deprived of this instruction. No one who would save the children from this fate and the state from its consequences, or who believes

with Webster that it is "the right and bounden duty of government to provide for the instruction of all youth" on matters essential to personal well-being and to good citizenship, could consent to any neglect of the study in this grade, or to its being left to the haphazard methods of so-called incidental teaching.

THE FIFTH AND SIXTH YEARS

In these days of child study we have learned that a method that does not take into consideration those moods of the child which are due to his progressive development, and adapt itself to them will fail of the best results. The child is ever looking to the future with an expectant pride in the more advanced things he is to do and learn, and to the year and its lessons just passed with a kind of contempt, as to a period of infantile studies and immaturity. To do as the big boys and girls do, and to study what they study in the higher classes is the attractive goal for children as they emerge from the fourth year.

The simple lessons and book that interested and taught the fourth year pupil to obey the laws of hygiene he could understand will not hold him another year, if he stays in school, unless those lessons are enlarged and presented in a form adapted to his increased intelligence. Give the child that reaches the fifth and sixth years a larger treatment of the subject, more facts concerning the structure of his body in which he is always interested, and the subject will lose none of its freshness. He can at this age understand more clearly the laws that are written in his own body, laws which must be obeyed to secure a good mental and moral as well as a sound physical development and that success in life which every child craves. Let the appeal come through the intelligence to the reason and moral nature, and the study will not pall on pupils of this age, but will make that warning and restraining impression which truth can be relied upon to make when pressed home in this way. A good text-book, adapted to his development, in the hands of the pupil as one

help in his study is an essential in this branch as well as in others.

Three or four lessons a week at most, for ten weeks each year during the fifth and sixth years, will cover so much of the subject as is adapted to these grades. About this amount of matter is ordinarily covered in an elementary text-book on this subject.

If five years are a little more than the average school attendance in this country as a whole, and if six and three-quarters years are a little more than the attendance in the older and more advanced states, to neglect to have this study pursued to the best possible advantage in the fifth and sixth years is to fail to continue the warning instruction when temptations thicken about

the child; it is also to relegate the future majorities of our country to that ignorance concerning the laws of health, including the nature and effects of alcoholic drinks, which will give the saloon the right of way in the future as it destroys our people and their government.

SEVENTH AND EIGHTH YEARS AND THE HIGH SCHOOL

As these years are reached, pupils begin to leave school in large numbers to join the industrial ranks. Compared with those who enter the primary classes, the number who go on through the seventh and eighth years is small. But the more education a man or woman has received, other things being equal, the more influence for good or bad they will subsequently be able to exert; hence

a continuance of this progressive study is urgently needed to enable the pupil to resist the luring temptations that press hard upon him during these years, and to equip these comparatively few scholars to go out into life strong in intelligent conviction for a future of abstinence for themselves and for their countrymen from enslaving alcoholic drinks and other narcotics.

Where there are nine years below the high school, pupils who have successfully passed tests or examinations in this study from grade to grade can well drop it in the ninth year, leaving it to be taken up and completed during the first



"He is not here, but is risen."
"From his tomb the imprisoned God, like the strong sunrise, broke away."

year of the high school where a full and more technical treatment can be easily mastered.

TOO MUCH TIME OR STUDY IS NOT ASKED

The impression that this scheme of study asks for too much attention is dispelled when an estimate is made of the time it really calls for.

The maximum of four text-book lessons per week for ten weeks per year, from the beginning of the fourth school year through the first year of the high school, makes only two hundred and forty lessons in all, distributed through six years, and these lessons are in the whole subject of physiology and hygiene, with only enough temperance matter to cover that portion of the subject.

But there is too much temperance matter the critics are saying. In the indorsed manuals of instruction for high schools the physiology and general hygiene occupies all the text except twenty pages, and four-fifths of all the matter in the books for the grades below the high school. Twenty pages in high school books and one-fifth of the space in manuals for the lower grades, devoted to the nature and effects of alcoholic drinks and narcotics, is barely enough to cover these important facts of the study. Whoever objects to such amount either does not want this subject taught at all, or has given no study to the question of how much truth should be presented to correct popular fallacies and to present such a progressive body of facts from year to year as will make the pupil intelligent on this question.

WHY DIFFUSE THE SUBJECT THROUGH THE WHOLE SCHOOL COURSE

We have shown that to reach all classes, and thus to pre-empt all the future men and women of this country for an intelligent sobriety, and to guide them to the formation of right habits before wrong ones get the right of way, this study must not only begin in the primary classes but continue as a progressive branch through-

out the grades; that such a scheme takes only a reasonable amount of time in the school course; and that when properly graded it is not a repetition but the presentation of fresh matter in a progressively developing subject.

TEXT-BOOKS

"Why are you so insistent upon text-books in the hands of pupils?" is asked. Because, as we have shown, books rightly used as one source of information are essential to the success of any study, especially when teachers have had no special training as to facts to be taught or to methods of teaching these facts. If the diffusion of the truths contained in geography would prevent the formation of an appetite that supports a great moneyed interest, the friends of geography would have to watch insistentlest text-books on geography should be taken out or left out of the schools.

MARY H. HUNT.



"So hushed the brooding air,
I could hear the sweep of an angel's wings
If one should earthward fare."

SPRING CHIMES

Give spring a welcome,
Ring, bells, ring,
Ring out a welcome to the
spring!

The birds are singing, west
winds blow,
White fleecy cloudlets come
and go;
The sun is shining, sparkling
rain
Beats on the lattice window-
pane;
Daffodil starry buds unfold,
Touched by March sunshine
into gold.

In sheltered corners, dewy
wet,
Blooms the sweet-scented
violet;
The graceful snowdrop spring
foretells,
As wanton breezes shake its
bells.

Spring, summer's handmaid
comes apace,

With tear-stained April's sunny face.
All hail! to April,
Ring, bells, ring,
A chime of welcome
To the spring!

—ROSE A. LEA.



THE COVERING OF THE BODY

"THE child's mind," says a witty French writer, "is like a bottle with a small neck. You may pour as much as you please, but only a little will enter at a time."

This is one reason why lessons in hygiene should be given in all primary and intermediate grades. It will not do to omit this teaching until the child is mature enough to understand the whole subject, for these years are the habit-forming period of his life. If he does not learn thus early to use his eyes and ears, to love personal neatness, and to control his appetites, the chances are that wrong habits will be formed to be a drag upon all his later life. Work with children must be given "line upon line, precept upon precept," ever varying yet never omitted, in order to secure the best results.

No subject is more fascinating to the child than the study of his own body, especially when taken up in connection with other forms of animal life which he knows and loves. Furthermore, in no better way can he be taught habits of right living than by noticing the care taken by nearly all animals to keep themselves clean, to eat and drink only what agrees with them, and to live regularly and happily.

(1)

THE APPEARANCE OF THE SKIN

The topic developed for this month's work in primary classes may either follow or precede lessons on the sense of touch. In either case, however, it should not be taken up until the external parts of the body have been studied as a whole.

Children will be quick to point out differences between the head, arms, legs and trunk, but they will not so easily find out how these parts resemble one another. Give the little ones a chance to use their own powers of observation, before showing them that the whole surface of the body has the same kind of covering which fits it perfectly in every part.

Call their attention to the color of the skin.

Is this the same in all people? Show colored pictures of the various race types, most of which will already be familiar to children living in large cities, and explain how the difference in color helps to make people look unlike.

Compare with the class the texture of the skin in various parts of the body. Find where the skin is thinnest and most sensitive. Where is it thicker than ordinary skin? Explain why the skin is thickened on the soles of the feet when people walk a great deal. Why will an oarsman or a blacksmith have hard, calloused hands? Explain how corns are caused, and how to avoid them by always wearing well fitting shoes.

Have the children examine their own hands to find where the skin fits smoothly and where it lies in folds or wrinkles. Do the same with the arm. Ask all to move the fingers back and forth. Repeat with the hand and forearm. Who can think of a reason why the skin which covers a joint is looser and more wrinkled than elsewhere?

Look at a bit of skin through a magnifying glass and compare its overlapping layers to the shingled roof of a house. Why is it better to have the skin made in this way rather than as a perfectly smooth surface?

Call attention to the tiny holes which dot the surface of the skin; also to the fine soft hairs which grow out of it. Find another part of the body which grows out of the skin. Show the children how the nails look under the microscope.

(2)

THE SKIN IN ANIMALS

Who has a pet dog at home? What kind of a covering does he wear? Give each child a chance to describe the smooth or shaggy coat of his pet.

What animal has a covering of wool? Why does the farmer shear this off when summer comes? Write on the board the names of a number of animals and ask the children to describe the covering which each wears. The same idea may be developed in another way by describing the covering of animals well known to the children, and letting the class give the name of the animal from your description.

How are our barnyard fowls and the birds protected by the covering nature has given them? Sketch a robin on the board and show how his feathers are arranged to shed water and keep him from being wet or cold. Ask each child to watch some bird until he can describe the different colors of its plumage. Notice the young birds as they appear this spring and find how their plumage differs from that of the parents. When does it change its color? How can we tell the male and female birds by their plumage?

Notice the covering worn by other forms of animal life in your own vicinity. If near the seacoast, study with the children the shell of the clam and lobster and the scales of different fish; if in the country, call attention to the covering of the frog, caterpillar, squirrel, rabbit, or that of any animal or bird which may be found on the way to school. Too much material rather than its lack will confront every teacher, and judicious selection must be made in order not to encroach upon the time needed for other topics.

As fast as the children become familiar with the characteristic covering of any bird or animal, help them to compare this with the skin which protects our own bodies. How does it differ? Is there any way in which it is like our skin?

Find parts growing from the skin of the bird which correspond to our nails. Find similar parts in the cat, dog and hen. How do these parts differ in each case? In what ways are they alike?

Find parts growing from the skin of the cow, goat and deer which are different from anything found in man. What parts grow from the skin in insects?

Make all work of this kind with little children wholly informal. The wise teacher will follow their lead as far as possible, at the same time never losing sight of the object to be gained in taking up this phase of the topic, namely, to teach the children to notice the covering of animals, and to think how and why it differs from that of people.

(3)

USES OF THE SKIN

Go outdoors with the children and find a plant which lives only until frost comes. Find another of about the same size which lives and grows year after year. Cut a section from the stem of each and compare the two. What difference can be seen? How does the tough hard skin of a tree protect it from storms and freezing weather?

How is the bird kept warm in winter? the fox? the sheep? Talk about the covering of animals already studied, and help the children to decide in each case how this protects the animal from the cold. Think of reasons why animals need coats of hair or wool or feathers, while people have no such natural covering.

The skin helps to protect every living thing from too great cold or heat, but it is not thick enough in people to keep them warm without other covering as it does the animals.

How do we keep warm in winter? Call attention to the houses which shelter us from storms, the stoves and furnaces which warm the air inside, and the thick clothing we wear. Show that our clothing helps to keep us warm,

but does not have heat in itself any more than the stove does when there is no fire in it. If we wrap up a chair in thick clothing the chair is no warmer than before. It is really the food we eat which makes us warm.

The skin protects the body in other ways besides helping to keep out the cold. Notice what happens when anything comes near our eyes. The little curtains of skin quickly shut down over them and keep out anything which might cause them pain.

Tell the children the story of the chemist who once had a bottle explode in his hands. At first he thought his eyesight was destroyed, but when the surgeon made an examination he found that the man had shut his eyes so quickly that the pieces of glass had struck only the lids, while the eyes themselves were unharmed.

Every child has had more or less burns and bruises, and can tell from his own experience how the skin protects different parts of the body from injury. When a room is to be swept why do we cover up the furniture? Show that we need the covering of skin on our bodies to keep dust and dirt from the delicate parts within.

Call attention again to the little holes on the surface of the skin and explain their uses. Ask why we have ventilators in a room. Show that the pores of the skin act as ventilators of the body. They work much better than those in any room for they do not need any one to look after them. When we are too warm they open wide and let out the extra heat; when we are cold they close of their own accord and keep the heat inside.

What do we call the drops of water which come on our faces when we are very warm? Tell the children that the body gets rid of some of its waste matter through the skin when we perspire. In this way the pores of the skin are like little sewers as well as ventilators.

How many ways have we found now in which the skin helps the body? Who can name them all? Such a very useful part must be well taken care of, so we may study next the

CARE OF THE SKIN

Why do we not wear the same clothes year after year? Suppose a child should try to put on the coat he had worn two or three winters before, why would it not fit him? Get from the children the main reasons why we change our clothing; because it quickly gets soiled, because it wears out, because we outgrow it, and because we need to dress according to the weather. People and animals need new skin every little while for some or all of these reasons. We must find how they get it.

If any in the class have pet birds at home ask such children to tell the others when their birds moult. Explain the reason. Tell the chil-

dren also how an animal's fur differs in summer and winter. Birds and animals need different clothes for hot and cold weather as much as we do, but they can not make or buy their own, so mother nature has a new suit for them as often as they are ready for it.

In the country a snake's skin can often be found in the spring. Bring one into class if you can get it. Explain how the little owner got rid of this old suit, and where his new one came from. What other animals shed the skin.

We do not have a new skin all at once as the snake does. How do we get rid of worn-out parts almost without knowing it?

Use the microscope again to show the tiny scales which compose the outer layer of the skin. Call attention to the different appearance of these scales; some just ready to drop off, others loosening a very little, and still others firmly fixed in place. Explain that new skin is all the time growing underneath, and as it grows it pushes off the outer layer little by little, but so gently that we are scarcely aware of it.

If we could have new clothes or an entirely new skin every day, it would not matter much what kind of care we took of either, but we must wear the same ones some little time, so it is necessary to keep them in good condition.

Watch how the cat takes care of her fur coat. What is the first thing she does when she comes into the house, especially if she has been where it is at all muddy? How do the birds keep their feathers smooth and in perfect order? What do our hands and faces need after we have been at play?

Many children come from homes where little or no training in personal cleanliness is given. This lack must be made good in the school-room. Call on some of the neatest children to tell what they know about the rules for bathing, and supplement their fragmentary knowledge as much as may be necessary to acquaint every child with the proper temperature of water for warm, tepid and cold baths, the best time for taking each, the reason soap should be used, the value of a daily morning bath in cool water, and the necessary precautions against taking cold.

Tell the children why all clothing worn during the daytime should be replaced by a different set of garments at night. Explain what should be done with clothing taken off at night which is to be put on again in the morning.

Show the effect of fresh air and sunshine on the skin itself as well as in purifying our garments. How can we tell people who have spent the summer at the shore or on a farm by their looks? What kind of a complexion do people have who live in dark houses and who seldom go outdoors?

Pot two plants in the same kind of soil.

Place one in a sunny window and keep the other in the dark for several days. Keep both well watered and notice the difference in the foliage. Show that light and sunshine are equally necessary to people's health, and see that your pupils are outdoors several hours a day in all but the most inclement weather.

Find what the children are in the habit of eating at home and at school, and tactfully suggest a more healthful diet where necessary. Everybody wants to have a good complexion, and to get such and keep it one must eat food which makes good blood. Put a list of such foods on the board.

We can usually tell the tobacco smoker by his sallow complexion and muddy skin. Men who want to hire boys nowadays often ask them to hold up their hands. If the tips of the fingers are yellowed and stained by the use of tobacco, they are rejected in favor of some one else.

MEMORY POINTS

The skin covers the entire surface of the body.

The skin is most sensitive on the tips of the fingers and on the face.

The skin fits the body perfectly in every part. The hair, teeth, and nails are changed parts of the skin.

Animals have thicker coverings than people because they can not provide clothing for themselves.

The skin helps protect the body from heat, cold, injury, and dirt.

Some of the waste matter from our bodies passes off through the skin.

The skin must be bathed often to keep it clean and in good working order.

Pure air and sunshine keep the skin healthy, and help to give one a good color.

We must eat plain, wholesome food if we want to grow and keep well.

Alcohol and tobacco often spoil the looks of the skin.

AUTHORITATIVE QUOTATIONS

ALCOHOL HINDERS THE WORK OF THE SKIN

Alcohol dilates the arterioles and capillaries of the skin. If ale be used in comparatively small amounts for a long period of time the capillaries of the skin become permanently dilated, thus giving the skin, especially of the face, a very red appearance. When the skin becomes thus changed, it can not properly perform its portion of the work of excretion, and so the kidneys have to do a portion of the work which the skin ought to do. Thus they become overworked.—W. S. HALL, Ph.D., M.D., Professor of Physiology, Northwestern University Medical School.

ALCOHOL AND SKIN DISEASES

So frequently is alcoholism accompanied by acne rosacea that we are warranted in believing that these diseases hold the relation to each other of cause and effect. Undoubtedly this skin disease is produced by the paralyzing influence of alcohol on the vaso-motor nerves. Thereby the contracting force of the blood vessels is lessened; the blood stream is not moved forward with normal rapidity; blood collects in the vessels and enlarges their caliber; acne rosacea is the result.—*Journal of Inebriety*.

ALCOHOL LOWERS THE TEMPERATURE OF THE BODY

The slight heat caused by the internal combustion of alcohol, which contains but little carbon and hydrogen compared with real foods, is counterbalanced by the effect of alcohol in lowering the temperature of the body. The dilation of the blood vessels of the skin, the increased radiation from the surface of the body, facts proved by experiments, far more than compensate for the slight gain in heat which combustion of a few grams of alcohol can produce in the system.—Dr. E. DESTREE, Professor in the University of Brussels.

While the oxidation of alcohol within the body may give rise to a certain amount of heat, the circumstances attending its oxidation remove from it all claims as a food material. Still more shall we be justified in denying its food properties when we remember that the increased bodily temperature lasts only for a single moment. Within two or three minutes after its ingestion paralysis of the peripheral nerve endings causes dilatation of the surface blood vessels, giving rise to increased heat radiation, so that though the total amount of bodily heat may for a short time be increased, the increase in heat radiation more than compensates for the increased production, hence the actual temperature of the body is lowered after the imbibition of even very small quantities of alcohol.—Dr. JOHN MADDEN, Professor of

Physiology in the Wisconsin College of Physicians and Surgeons.

Dr. Pembrey says alcohol seems to act in two ways. It has little or no effect upon the production of heat in the tissues, but greatly increases the loss of heat by causing the cutaneous vessels to dilate, stimulating the sweat glands, and quickening the circulation. The normal reaction to cold, namely, increased production of heat and contraction of the cutaneous vessels, is partly paralyzed by large doses of alcohol, with the result that drunkards exposed to cold quickly freeze to death. Even small quantities of alcohol appear to bring about a certain lowering of the temperature—about half a degree—whilst poisonous doses act in an extraordinarily marked manner in this direction.—G. SIMS WOODHEAD, M. A., M.D., Professor of Pathology in the University of Cambridge.



"How light the touches are that kiss
The music from the chords of life"

SPIRITS PREDISPOSE TO HEAD STROKE

It seems quite certain also that not only is heat less well borne but that head-stroke is predisposed to when spirits or beverages containing much alcohol are used. Sir Joseph Fayrer says that "a young man who goes out to any tropical country and neither smokes nor drinks is doubly armed against the climate and all other evils."—

LANE, NOTTER and FIRTH in their *Theory and Practice of Hygiene*.

A teacher was explaining to a little girl how the trees developed their foliage in the spring. "Ah, yes," said the little miss, "I understand; they keep their summer clothes in their trunks."—*New England Magazine*.

"Winged lute that we call a bluebird,
You blend in a silver strain
The sound of the laughing waters,
The patter of spring's sweet rain,
The voice of the wind, the sunshine,
And fragrance of blossoming things,
Ah! you are a poem of April,
That God endowed with wings."



OVERDUE

WE can not understand why the world has had to wait so long for saving truth. It was four thousand years from the beginning before He came who said: "I am the truth." Truth was isolated for fourteen hundred years after Christ, waiting for its recording angel, the printing press, to tell its story to those who had no gold with which to pay for the copied page.

More than eighteen hundred years went by before steam and electricity furnished the wings that are sending truth on the printed page in all tongues to the uttermost parts of the earth.

Meantime, men are delving as never before for the answer to the inquiry concerning almost everything, "What is truth?" The answers, and the practical use men are making of the answers they are wringing from nature's hitherto hidden secrets, are transforming human life in nearly all its aspects.

The use of alcoholic drinks has been coeval with human history, and through the ages has been a cause of misery that language is poor to describe. Within the last twenty-five years modern scientific investigation has stripped the glamour from these beverages and shown that it is the nature of the alcohol they contain to cause the misery which follows their use.

During the centuries gone, time has seemed to be a factor retarding human progress. Long periods of years have been allowed to elapse between an important discovery of truth and its application to human need. Whether it is because the world is nearing the time when the reign of evil is to be limited none can tell, but certain it is to the student of events past and present that application sooner follows the discovery of truth to-day than ever before in the

world's history. It was only seven years after Dr. Benjamin Ward Richardson's discoveries concerning the evil nature and effects of alcoholic drinks that the first temperance education law was enacted in this country, requiring these truths taught all pupils in all public schools, and less than twenty-five years had elapsed before the study was made mandatory for all pupils in the schools of almost the whole country. These laws began to go generally into force, with a good, well graded school literature, about 1890. Four years after this study was generally pursued the per capita consumption of alcohol for the whole country began to decline, in spite of the fact that a vast army of people came to us during that time from the old world, bringing their alcoholic ideas and habits to increase our drink bill.

On the 28th of February, 1900, in the University Auditorium Hall in Chicago, Illinois, the superintendents of schools of the United States were in session at their annual meeting. Extending across the front of the speaker's platform was an imposing array of large glass tubes half filled with granular matter of various colors, and other apparatus which implied profound research but to which no reference was made in the address which followed on the subject to which they supposedly referred.

Back of these stood Professor Atwater who told the same story that had appeared in the newspapers of the land, to the effect that he had proved that alcohol protects the material of the body as effectively as sugar, fat or starch, and therefore is in that sense a food. His caricature and that of others who followed him of temperance teaching in the public schools, of its advocates, and the indorsed books were cheered in a way that would have gladdened the brewers but sickened those who see no permanent overthrow of this crushing evil except through education.

Being a member of the National Educational Association and having, therefore, a right to the floor, the writer of this article, mentally saying like Esther of old, "If I perish, I perish," ventured to call the attention of the audience to the fact that Professor Atwater, judged by the figures of his own tables, had not proved that alcohol protected the material of the body of the man experimented on, and therefore had not thus proved it to be a food. As a result, a committee of seven was chosen whose duty it was to "report upon the condition and progress of scientific inquiry as to the action of alcohol on the human system, and to recommend what action, if any, by this department is justified by the results of these inquiries."

During the twelve months that followed, more testimony as to the results of scientific inquiry on this question came to us from the laboratories of the old world and from our own

country than ever before in the same time. Care was taken that this should reach the committee of seven and all superintendents of schools in the United States as far as possible.

Three weeks ago the superintendents of schools from the Atlantic to the Pacific and from the lakes to the gulf were again in session in Chicago. The hall was full, and the silence intense when Mr. Lane, District Superintendent of the Chicago Schools, chairman of this committee, read the report.

When that part was reached which stated that "no authority has been found to maintain that alcohol is a food in the ordinary sense of that term; and that the question of the supposed food value of alcohol is a technical one for experts to determine, and not one which needs to concern the man and woman who are engaged in the work of public instruction of children and youth," the audience cheered, and we knew that the friend was right who said as we entered the hall: "There is a different spirit here from that of last year."

The full report was as follows:

"The Department of Superintendence agrees cordially with the special advocates of the temperance cause in holding that everything which public instruction can do in the battle against intemperance ought to be done, and that both physiology and hygiene should be so taught as to leave in the minds of children and youths an adequate and proper knowledge of the effects of alcoholic drinks, stimulants and narcotics on the human system.

"Since the last meeting of this department there has been considerable discussion of the question as to whether alcohol under any conditions is properly to be defined as an article of food. Medical authorities are quoted in support of both sides of this question; but no authority has been found to maintain that alcohol is a food in the ordinary sense of that term. The question of the supposed food value of alcohol is a technical one for medical experts to determine, and not one which needs to concern the man and woman who are engaged in the work of public instruction of children and youth. (Applause.) For them, it is enough to know that its use as a beverage is injurious and that all authorities agree in deprecating the formation of the drinking habit, and in commending all practicable efforts, through public instruction, to promote the cause of temperance.

"The questions of highest importance for teachers and superintendents of schools to consider are those which relate to the methods by which temperance instruction shall be imparted, the extent to which it shall be carried, and the subject matter to be presented.

"The educational side of this question is vitally important and demands thorough and systematic study.

"We, therefore, recommend that a body of educational doctrine be formulated which may guide temperance instruction in the schools throughout the country, and we further recommend that the scope of the investigation be so enlarged as to cover not only the topics already suggested, but also the whole field of personal hygiene, so far as this is a practicable matter for school instruction.

"We also recommend that this investigation be conducted under the direction of the National Council of Education, in accordance with the regulations of the National Educational Association."

Professor Henry Sabin, who has been rightly termed the Horace Mann of Iowa, seconded the motion for the adoption of the report in a brief but earnest speech in which he appealed for "a candid and sincere committee in whom the country could have confidence," to be chosen from the Council to continue the investigation of this topic. Quickly there came the call for "question" which was immediately put and the report was adopted without further discussion or a dissenting voice.

The reader will see that three important points have been unanimously agreed to by this national body of educators:

First, they cordially agree with the special advocates of temperance that the school should do everything it can to impart adequate and proper knowledge concerning the use of alcoholic drinks and other narcotics.

Second, that in their judgment the claim that alcohol is a food in any just sense of the use of the word "food" is not sustained, and that the Atwater discussion on that point is not germane to the teacher's work.

Third, that the educational side of this subject is vitally important and demands thorough and systematic study.

We are grateful for the effect of the twelve months' study of truth as shown in the first two points of this report, and for the sense of need of more study expressed in the third.

It is nineteen years since the first temperance education law was passed in the United States, and eleven years since these laws began to go quite universally into force in the schools under your jurisdiction, educators of this country. This is not the slow-going fifteenth or sixteenth century, but the twentieth century when application follows quickly on the heels of discovery. Your enthusiasm for this branch, the result of your own professional study to ascertain what has been discovered and therefore should be taught on this subject, is overdue. The school, the country, and the times are waiting for it. The men and women of America have too often responded to the clarion call of duty to the home, the school, and the country to fail now, and we can not believe they will.

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"A gush of bird-song, a patter of dew,
A cloud, and a rainbow's warning,
Suddenly sunshine and perfect blue—
An April day in the morning."

ANTI-ALCOHOL STUDY IN EUROPE

NO estimation of the prospects of the abolition of alcoholic slavery upon which the new century dawns would be accurate which left out of account the results of scientific inquiry in Europe. The "Congress for the Prevention of the Abuse of Alcohol" at its last session in Paris changed its name to "The Anti-Alcohol Congress," showing that it has discovered that any use of alcohol as a beverage is abuse.

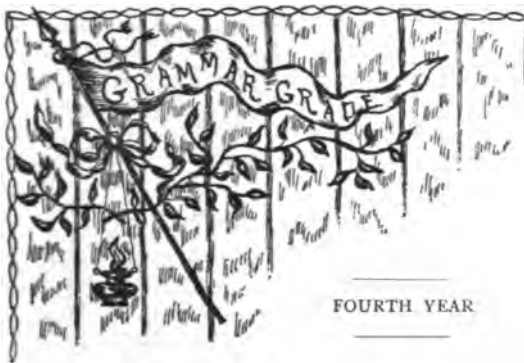
There is a total abstinence society in Germany composed of one hundred and fifty physicians who edit and contribute scientific articles to its monthly organ, *The Internationale Monatsschrift zur Bekämpfung der Trinksitten*. There is also a teacher's total abstinence society which publishes an able monthly organ, *Die Enthaltbarkeit*, which shows that a deep sense of the teacher's responsibility to the future for the overthrow of the alcohol slavery has reached them. The famous universities of Switzerland, Basle and Zürich, and of Würzburg are headquarters for active promulgation of the scientific reasons for total abstinence, in which hundreds of the medical students and graduates take part. In France the Academy of Sciences carried on an extended series of physiological investigations which brought them to the conclusion that alcohol is a poison (*Bulletin of the Academy of Medicine*, 1895, Vol. XXXIV.) In Italy an Anti-Alcoholic League has been organized to which the entire medical society of one of the provinces has just voted its full approval and adherence. In England the scientific method has gained for total abstinence some of the most prominent men in the medical profession, among whom are Dr. Sims Woodhead, Professor of Pathology in Cambridge University, and Dr.

Victor Horsley, Professor of Chirurgy in University College, London, whose recent lecture on the effect of small doses of alcohol, with its conclusion that science points to total abstinence, has echoed through the entire medical world.

One of the most active temperance organizations of the present time is located in Vienna, Austria, an organization which, curiously enough grew out of the appearance of the plague in that city in 1898. When the hospital attendant, whose carelessness in handling the cultures of the plague germ in the laboratory caused the outbreak, his nurse, and the doctor who attended him were all stricken down, the hospital committee sent for Dr. Poeck, who had made a special study of the plague in India. Before taking him to see his patients the committee offered him what they supposed to be the best possible fortification against the contagion, a glass of champagne. Much to their surprise the doctor refused it and asked for a cup of tea. Dr. Poeck was not able to save the patients, but he prevented the plague from spreading further, and then the terror-stricken people in joy over their deliverance could not do enough to show him honor. Everywhere he was fêted and dined. All of these occasions he used, not for his own advantage, but to impress upon the people the principles and importance of total abstinence. Now there is an abstinence society in Vienna which includes many of the most distinguished physicians of the city, and which is actively preparing and disseminating most valuable total abstinence literature among all classes of the people.

MRS. MARY E. GIFFORD

A RARE soul has passed into the life eternal in the going away of Mrs. Mary E. Gifford, State Superintendent of Scientific Temperance Instruction of the Massachusetts Woman's Christian Temperance Union. For a number of years local and county superintendent of this work, and for nearly three years in charge of the State department, Mrs. Gifford brought to the work not only her own well-grounded convictions as to its necessity and importance, but a grasp upon its underlying principles which, when coupled with her great executive ability, made her a most successful leader. With a mind of unusual activity she quickly perceived the essential features of any situation, and brought to bear upon it a consecrated purpose, unflinching tact, and a cheery, winsome faith in human nature. Persistent, courageous, tender-hearted toward all humanity and responsive to its need, a loyal and sincere friend, Mrs. Gifford held a warm place in the hearts of all with whom she came in contact and leaves a far-reaching influence upon many lives.



MUSCULAR DEVELOPMENT

AN oak may be started in a nursery, and its early growth so stimulated that in twelve months it will have reached the size of a three-year-old tree grown under normal conditions. But transplant the two into the same soil and note the difference. Instead of continuing their development simultaneously, the older tree will far outstrip the other until the real difference in their ages is again apparent.

The time factor can never be ignored in growth, whether one deals with plant or animal life. It is as essential for the child as for the tree. The training of the strongest man in history began before his birth, and was not relaxed until he came to manhood. Admiral Dewey's reputation was made in a few hours, but behind that brilliant victory at Manila lay years of preparation both in body and mind which alone made his success possible.

The nation intrusts the work of citizen-making in large measure to the schools. It is their mission to give to the mind and to the body of youth "all the force, all the beauty, and all the perfection of which they are capable," and to this end the work must continue without break from the lowest primary grade to the completion of the course, each year witnessing its own degree of advancement.

Take, for example, the development of the muscular system. Children grew up some how and acquired more or less of strength and skill before ever hearing of muscles, but since growth is always dependent upon certain conditions it is wiser to act in accordance with them understandingly, than to trust to luck that they may be stumbled upon.

With this premise, how shall we take up the work of this topic with fourth year classes. First we must know ourselves and be ready to make plain to our pupils

WHAT IT INCLUDES

for them; and how they are to eat, drink, sleep and exercise that this year may show a distinct gain in physical development, equally removed from forced and from stunted growth.

The first lessons will naturally take up the study of the muscles themselves and their relation to the rest of the body.

As we look at a person or an animal we do not see the muscles. Where are these parts of the body? A good idea of the relative position of muscles may be had by looking at the cross section of a chicken's leg. Have this well cooked, then cut carefully through the thickest part, using a small saw for the bone.

Have the class examine the cut surface and name the different layers, skin, fat, muscle, bone. Compare their structure. Why should they be arranged in this order? Find whether the same arrangement is followed in other parts of the body, the wings and breast, for instance. Show a chart of the muscles, and find from this whether the muscle layer covers the whole body.

Ask the pupils to imagine they have no muscles. What are some of the things which they could no longer do if this were the case? Find how the muscles help in walking, running, eating, playing ball, jumping rope, reading. Which muscles are used in each case? Have the class mention other kinds of work or play, and determine how each is made possible by the action of the muscles. Point out from a chart the important muscles of the body and find what each does. Find muscles which work in pairs and show why this arrangement is a good one. Make drawings of muscles of different shapes and sizes. Why are they not all alike? Find the strongest muscles in the body. What are the strongest muscles in the horse? the cat? the swallow? Cut open a chicken's heart and find what it is made of. Why should it be made of muscle rather than bone? Notice the tendons in a chicken's leg and compare these with muscle. Why are both tendons and muscles needed? Find the tendons in the wrist; the tendon of Achilles. Read to the class the myth which gave the name to this tendon?

WHAT IT DEPENDS UPON

Get from the different members of the class their idea of the size and height of a well developed boy and girl of their own age.

Compare with correct measurements taken from the statistics of examining physicians, life insurance companies or gymnasium directors. Take the same measurements of your pupils and let them see for themselves which of their own muscles need special training to bring them up to the proper standard. Suppose one child has small, undeveloped legs. How can he make them the proper size? Discuss forms of exercise which will develop these muscles. Why should one not take long walks at first? Why is regular exercise necessary? Find how one should exercise to develop the arm muscles; those of the back, shoulders and waist. Why are very strong muscles of little use if the

heart is weak? How can we strengthen the heart? Show how the lungs and the way one breathes are connected with muscular development. Find two ways in which daily exercise in fresh air and sunshine strengthens the muscles. Compare the free, graceful motions of animals with the more awkward movements of people. How are we often hampered by the clothing we wear? Bring out the reasons why people need clothing, and decide how it should be worn to give free scope for muscular development. Find what muscles will be weak and stunted if one wears corsets or tight bands about the waist; small sleeves; tight shoes.

Why does one feel weak and faint after going without food for some time? Have the class find from their text-books how the food one eats gets to the muscles. What kinds of food can build up muscle? What kinds give it strength? Study the kinds of food allowed to athletes under training, and decide why each is used.

WHAT WILL HINDER IT

Find differences between muscle and fat; then where each is needed, and where it is not. Why is a fatty heart weak? Study the effects of alcoholic drinks, especially beer, upon muscle. Why can these substances not be used as foods?

Show that the important factors in muscular development are a steady increase in growth and strength. How are both hindered by the constant use of even a little beer, wine or cider?

Why do we feel pretty sure that boys who lounge about on street corners looking for something to lean against are in the habit of smoking? Why do they feel weak and tired most of the time?

Find how tobacco can cause this effect, both by what it does and by what it does not do.

How do we take care of a piece of choice machinery? Show that the body needs even greater care because it is more valuable. Ask your pupils to find about what they cost their parents each year for food, clothing, home and care. If the same amount of money were put into a fine animal or a handsome piece of furniture, we should take the best of care of it. Can we afford to do less in caring for ourselves?

AUTHORITATIVE QUOTATIONS

ALCOHOL DOES NOT INCREASE STRENGTH

The belief that alcohol gives strength to the weary is particularly dangerous. To stifle this feeling of fatigue in order to be able to work on, is like forcibly closing the safety valve so that the boiler may be overheated.—G. BUNGE, M.D., Professor Physiological Chemistry, University of Basle.

ALCOHOL LEADS TO FATTY DEGENERATION

If by the aid of the microscope we examine a very fine section of muscle taken from a per-

son in good health, we find the muscles firm, elastic, and of a bright red color, made up of parallel fibres with beautiful crossings; but if we similarly examine the muscle of a man who leads an idle, sedentary life, and indulges in intoxicating drinks, we detect at once a pale, flabby, inelastic, oily appearance.—HENRY MONROE, M.D.

ALCOHOL PARALYZES WORKING MUSCLE

The experiments of Gluck show that alcohol paralyzes in a very evident manner, and during a very long time, the muscle which works with energy and without rest. Gluck has been able to follow the paralyzing action of one dose of alcohol for ten hours, and to establish the fact that ale may diminish by one-half the muscular product.—H. PRIESIG in *L'Abstinence*.

ALCOHOL LESSENS AMOUNT OF WORK DONE

The total work product obtained with the use of alcohol is less than that obtained without it. It is the same in cold countries and in temperate regions. And we know that mountain guides, balloonists, bicyclists and athletes in general recognize the bad effect of alcohol on the muscular energy developed.—E. DESTREE, M.D., Professor in University of Brussels.

ALCOHOL A SERIOUS HINDRANCE TO WORK

From personal experience and from experiments most carefully conducted over large bodies of men, it is capable of proof, beyond all possibility of question, that alcohol, in ordinary circumstances, not only does not help work, but is a serious hindrance to work.—SIR ANDREW CLARK, M.D., Physician to the late Queen.

No amount of alcohol, however given, can increase the amount of work done in that same period of time without giving rise to very serious disturbances in some part or other of the body; indeed, the amount of work is never increased, as any temporary excitement is invariably followed by depression of such nature that the increase of work supposed to be done during the period of excitation is far more than counterbalanced by the diminution in the amount of work done during the period of depression.—G. SIMS WOODHEAD, M.D., University of Cambridge, England.

ALCOHOL ON STRENGTH AND ENDURANCE

Sir H. Kitchener found that grog rations showed loss of endurance, health and morale in four days; a beer ration gave the same result a little later. The abstainers gained in desirable qualities daily.

In the German army the Kaiser finds the beer-drinking soldier fifteen to twenty per cent. less effective than the abstainer.—G. D. HAGGARD, M.D.

NINETEENTH CENTURY NOTES

VI. LIBERTY AND UNITY

FORTY years ago this month there were stirring times in this broad land of ours. From north, south, east and west could be heard the sound of thousands of feet hurrying forward to that "irrepressible conflict" for human liberty of which the signal shot had fallen upon the little garrison of Fort Sumter.

Compromise and concession in the hope of averting disunion and war had been tried for the last time, and unsuccessfully, during the winter months between Lincoln's election and inauguration. The situation was clearly the result of the growth of two diametrically opposing ideas; on the one hand was the principle that all men are born free and equal, which had been one of the foundation stones of the nation's independence; on the other hand, the doctrine that one race might be held in personal subjection and degradation by another. But amid the confusion of secession and the first months of a actual strife, even among those who had labored most earnestly to create opposition to slavery as a great moral wrong,

there was indecision and uncertainty as to what bearing this possible breaking up of one nation into two might have upon the slavery question. Not a few, even Garrison and Horace Greeley, were inclined to let the South go peaceably if by that means the power of slavery could be broken. But the more far-sighted President saw that slavery had defined its own issue when it claimed the right of secession, and on that ground it must be met. "My paramount object in this struggle," he declared, "is to save the Union," and since slavery was the root from which disunion had sprung he had faith that it was in the providences of God that the Union would be preserved, and that somehow in its saving slavery would perish. Above the strife and confusion the sob of suffering humanity was heard, whose needs would not be met nor its woes relieved by a mere political separation,

peaceable or otherwise, of the slave and free states.

The war once begun went on in dreadful earnestness. The emergency in time brought forth great leaders; among them Lee and Stonewall Jackson for the South, Grant and Sherman, Farragut and Porter for the North. The tide of battle swept north then south, and up and down the Mississippi, but the conflict centered about the "border" states, where pro-slavery and anti-slavery, union and secession sentiments strove for mastery. At length, the time came when the President in his wisdom gave new heart to the strife and joy to the lovers of liberty throughout the world in that Emancipation Proclamation which freed the slaves in the states which had seceded, and began the work, sealed later by the Thirteenth and Fourteenth Amendments to the Constitution, which abolished slavery universally and

forever from the territory of the United States, and made the Declaration of Independence at last a living reality. When the four years' war was ended slavery had ceased, but the weather-worn flags fluttering to-day



The First Reading of the Emancipation Proclamation

above quiet graves in every corner of the land in ever increasing number tell at what fearful cost the Union was saved and the principle of personal human liberty established.

The decade following the close of the war was a period of readjustment. Provision had to be made for the legal and political status of the lately liberated race; the states which had seceded had to be restored to their normal condition in the Union. It was a delicate situation needing a more politic hand at the helm than that of President Johnson. Yet, while serious mistakes were made, law and order at last prevailed, and the republic, freed from the humiliating reproach and weight of slavery which for fifty years had hampered it at every step, having vindicated the principles of national integrity and the freedom and equality of man, was ready to enter upon a new field of

activity and to develop along hitherto untried lines.

While the United States was settling on the battlefield the great issues which had divided her councils, and the eyes of all the nations were turned toward her in anxious uncertainty as to the outcome, the rest of the world had not stood still. Despotic Russia had even outstripped democratic America, and while the latter was hesitating on the brink of war Russia's Emancipation Act of March 3, 1861, had set free her nearly 30,000,000 serfs without loss of life or treasure.

The restless Emperor of France, ever dreaming of a world-wide Napoleonic power, and seeing that the hands of the United States were tied with her own troubles, had taken advantage of one of the then frequent revolutions in Mexico and overthrowing the native government had set up Maximilian of Austria as Emperor. But as soon as the Civil War was over the United States re-asserted the principles of the Monroe Doctrine, and having a well-trained and victorious army to enforce those principles if need be, the French Emperor, unsupported even by public sentiment at home, found discretion the better part of valor and withdrew his troops from Mexico, leaving the unfortunate Maximilian to his fate which soon overtook him at the hands of the Mexicans. Left again to herself, Mexico in time worked out her own salvation to national freedom which began in truth in 1874 with the adoption of a liberal constitution under which the nation wisely guided by President Diaz has prospered.

The frustrating of France's schemes in Mexico was only one of the many difficulties which began to press in upon her after 1865. As in the case of Louis Philippe, the lack of success on the part of Louis Napoleon to keep France in an influential position in the councils of Europe, his absolute failure in Mexico, the rise of a strong power across the Rhine, the increasing corruption and extravagance of the court, and the repression of liberty of speech and action, all were undermining the empire and preparing it for the disasters which soon came. The push which suddenly toppled over this weakening structure came suddenly and with far-reaching consequences.

In 1863, King William of Prussia had called to the head of his ministry, the man who by his skill, his foresight, his patience, his persistence was to create a new nation, Herr von Bismarck. "Bismarck," says a late writer, "was alert, combative, ruthless, framing a policy and pursuing it without a shadow of turning; a man of one idea—the consolidation of German nationality—but of infinite resource in attaining its realization." As a preliminary step in securing such a consolidation under the leadership of Prussia, Bismarck proceeded to rid the German

states of Austria as a "non-German" power. Together Austria and Prussia, in 1864, had seized the Sleswick-Holstein territory; then, as Bismarck had probably anticipated, friction arose between the two over the government of this territory and war easily followed. The Prussians, gaining the co-operation of the North German states and of Italy who had a grudge of her own against Austria, because Venice was still Austrian territory, were easily and speedily victors, and the "Seven Weeks' War" of 1866 gave Prussia all she had hoped for. By the terms of peace Austria was excluded from the German union in which she had so long been the controlling factor, the Confederation of North German States was organized with Prussia at its head, while Austria was further weakened and the cause of Italian independence strengthened by the cession to Italy of Venice and all Austrian possessions in the Italian peninsula.

Southern Germany was still to be won, however, and to do this the pre-eminence of France must be weakened. It was not difficult to make a cause of quarrel. France fell into the trap so skilfully laid and in a burst of national passion, unconscious of her own inherent weakness and of Prussia's military strength, began the Franco-Prussian War of 1870. In less than two months the French army had been defeated, Napoleon III. was a prisoner, the empire had fallen, and the third French Republic had been proclaimed, while the German troops were pressing toward the gates of Paris. Four months later the brave defenders of the French capital were compelled to yield. The South German states, bound first by treaties, and now by the ties of having fought in a common cause, felt for the first time the heart-throbs of patriotism for a united Germany, and in the historic palace of Versailles, in January, 1871, William, king of Prussia, was crowned William I. of Germany, and German unity accomplished at last.

Meantime, Italy had not been neglecting her opportunity. The cession of Venice and other Austrian dependencies, in 1866, had left only the papal states near Rome outside the dominion of Victor Emmanuel. "Italy shall never enter Rome," Napoleon III. had declared, and the troops of France accordingly had guarded the temporal power of the Pope. But the war with Prussia which compelled France to withdraw her troops from Rome gave Italy her chance. In September, 1870, the Italian troops entered Rome; one month later the citizens by a vote of one hundred and thirty thousand to fifteen hundred voted for annexation to the kingdom of Italy; in July of the following year Rome became the capital of the kingdom, and the dream of a united and independent Italy was realized.

France had fallen upon troublous times. Her government had been overthrown. The terms of peace had demanded the sacrifice of the Rhine provinces, Alsace and Lorraine, and the payment of a billion dollars war indemnity. The worst elements in the nation asserted themselves, and for two months in the spring of 1871 Paris was under mob rule—the Commune—which brought only terror to the people and disaster to the city. But order was at length restored; the Third Republic under the presidency of Thiers set itself sternly, heroically and successfully to meeting the conditions of peace imposed by Germany. The republic, as such, triumphed over the various parties of monarchists and by 1875 was definitely organized, while liberty of speech and thought, equality before the law, and the right of trial by jury had been secured to the individual.

Thus at the end of the third quarter of the century the world had taken a long stride forward. Personal liberty for all races had been won in Russia, the United States, and the South American empire of Brazil. Wider civil and political liberties had been secured in France and Switzerland. Germany and Italy had completed the work of national independence and territorial unity, while even conservative Austria had granted some concessions to Hungary and other dissatisfied portions of the empire and had united Austria and Hungary under one crown. Steam and electricity were yearly bringing the far corners of the earth into closer touch. Railroads had been built in the United States connecting the Atlantic and Pacific coasts; the Atlantic cable had been perfected; while the completion of the Suez Canal had opened the new highway between Europe and the East which "human ingenuity for nearly twenty-five hundred years, since the days of the Pharaoh Necho, had been endeavoring to accomplish." The East itself was beginning to awake, and Japan was seeking a place among civilized nations. Undaunted explorers were penetrating the secrets of the heart of Africa and pushing their way into the ice-locked regions of the Pole.

The era closing in 1875 had been one of political and constitutional questions. The interests of the succeeding quarter century were already foreshadowed in the coming to the fore of social, industrial and commercial activities. The relations of governments to individuals, and of the rights and privileges of individuals in the state had become somewhat definitely defined. Coming years were to struggle with the even more complex problems of the relations of man to man.

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'Tis the first robin of spring!
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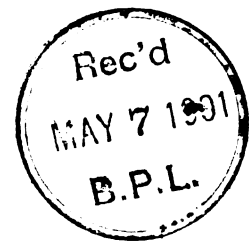
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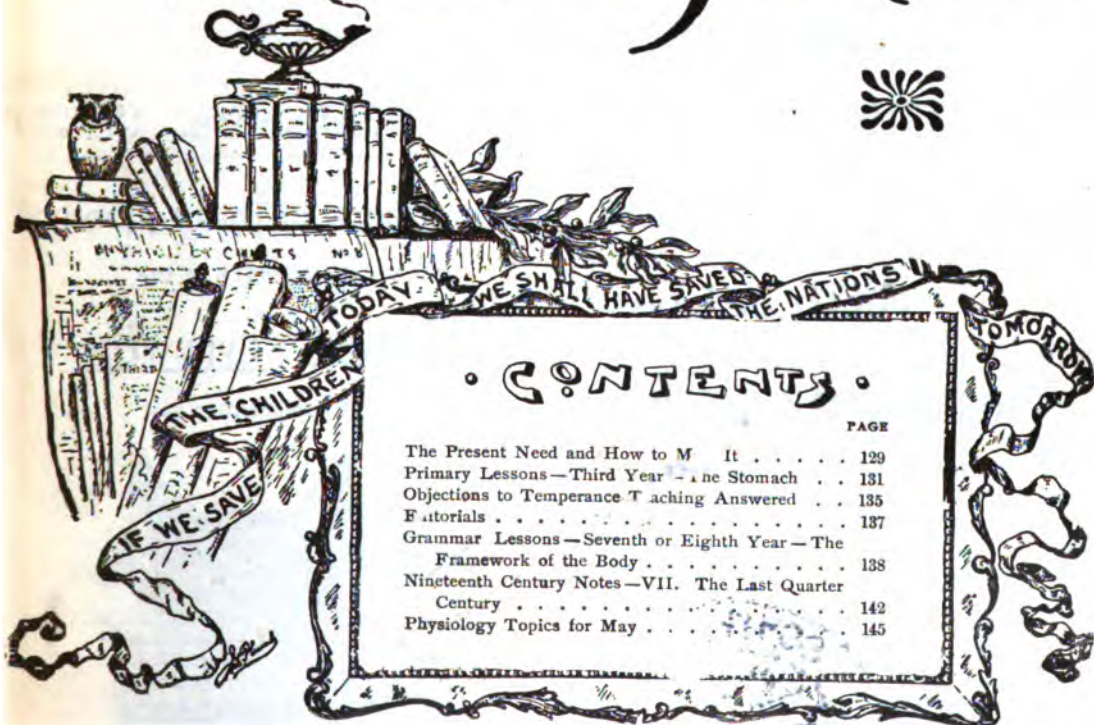
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School Physiology Journal

Vol. X.

BOSTON, MAY, 1901.

No. 9.

APPLE BLOSSOMS

Have you plucked the apple blossoms in the spring?

In the spring?

And caught their subtle odors in the spring?

Pink buds pouting at the light,

Crumpled petals, baby-white,

Just to touch them—a delight!

In the spring?

If you have not, then you know not, in the spring,

In the spring,

Half the color, beauty, wonder of the spring.

No sweet sight can I remember

Half so precious, half so tender,

As the apple blossoms render

In the spring.

WILLIAM WILSEY MARTIN.

THE PRESENT NEED AND HOW TO MEET IT

ONE day last summer, on the way home from one of the middle states, I reached New York in the early morning before the downtown offices I wished to visit were open. While waiting I strolled into Washington Park. I used to play there with my two little sisters in my childhood days when with our parents we lived in New York City. I had many times before seen the great arch erected there by a grateful people in honor of the Father of his country, but now I had leisure to study its grand proportions and inscription. The words at the top recalled a momentous hour in our national history. One hundred years ago and more, the convention was in session which framed the Federal Constitution which has held this nation together amid the strain and stress of a century.

While these constitution makers were in session, suggestions that palliatives and half measures would be most likely to find favor with the people seemed to be moving the convention, when Washington arose, his tall figure drawn up to its full height, and uttered the never to be forgotten words, a part of which I read from the top of that great arch that summer morning:

"If to please the people, we offer what we ourselves disapprove, how can we afterward defend our work? Let us raise a standard to which the wise and honest can repair; the event is in the hand of God."

I can never tell how those words carved in stone and blazoned by the morning sunlight thrilled and cheered me. They were the expression of a lofty soul whose vision swept the

moral horizon above the clamour of political truculence and selfish greed, and, seeing in that crisis God's great purposes for this new nation, called his countrymen to see them also. The event has proved that under the Constitution we have become a nation recognized as a great world power.

Our greatest danger now as a nation is not from violence from without, but from alcoholic and other narcotic habits within. In view of this danger, the sovereign people have said that all the schools shall teach all the future men and women of this land the evil nature of these foes and, together with the laws of health, their effects upon the human system, and we are so teaching. But it is seen that such universal knowledge will hurt the traffic in these substances, and from many sources there has come to me the urgent request, sometimes coupled with a threat, that the teaching about the nature of alcohol, that it is a poison and not a food, be taken out of the text-books.

"Do it for the sake of harmony. All the opposition, personal and otherwise, will die if you will." "Let us get together on some common ground where we can all stand." "Why are you so tenacious for a mere form of words in asserting that alcohol is a poison?" "It is not good policy to be so tenacious." "Why do you insist that all grades of pupils shall get this instruction?" "Conciliate by conceding to these disaffected school men."

All this and more importunity of the same sort was ringing in my ears that morning as my eyes rested on the words, "Let us raise a standard to which the wise and honest can repair; the event is in the hand of God." Then I knew it was not obstinacy or self-will that had refused response to entreaty for compromise, but loyalty to that standard to which the wise and honest can repair, leaving the event in the hand of God.

A nation redeemed from bondage to alcohol is "the event" which is in God's future for us if we are only true in these critical times. The laws that require this study are almost universally enacted. Millions of school children are studying the graded school literature on this subject that is being issued by nearly every school-book publishing house in this land.

The Atwater and other efforts to array the medical profession against this study have failed. Physicians are more than ever its friends. Now the suggestion of compromise needs to be met by study on the part of every temperance man and woman in the country, so that we all may

be sure of the reasons for the faith that is within us.

Another reason for this study is the fact that the last annual meeting of superintendents of schools at Chicago asked for the appointment of a committee by the National Council of Education to report to the National Educational Association a body of educational doctrine concerning the study of temperance physiology in the schools, covering three points: the extent to which the study should be carried, the methods of teaching it, and the matter to be taught.

The National Council to which these questions are referred is composed of sixty members chosen from the National Educational Association to which the Council reports. Every teacher, principal, and superintendent of schools in the United States is eligible to membership in this Association; hence, if the Council take up these questions their recommendations concerning them will be acted upon by the Association. You will see, therefore, how important it is for every teacher in the country to be well informed on these three points.

In educational circles there is an amazing amount of misapprehension as to what our temperance education laws really require. "Scare" objections have been dinned into the teachers' ears until many have taken it for granted that these objections are true and well grounded. But misapprehension and even prejudice will break down before the clear light of facts, and with these every teacher should become familiar.

Material for the discussion of the first question, "What shall be taught in temperance physiology," is found in the leaflets comprising the New Century Study of the Alcohol Question (price eight cents per set, or thirty-five cents per hundred), and in other leaflets and pamphlets published by the National Department of Scientific Temperance Instruction.

The second question for discussion, "To what extent shall temperance physiology be

taught," is thoroughly considered in the leading article of the SCHOOL PHYSIOLOGY JOURNAL for April of this year. This is also reprinted in leaflet form (price five cents).

Material for discussion of the question, "By what methods shall this subject be taught," will be ready for distribution at an early date.

"All truths have passed through periods of sifting and struggle before coming to their fruition." The future of our nation one hundred years ago depended upon the adoption of a constitution which was not time-serving but was adapted to the needs of its growth and development. To-day its future depends upon the education of all its coming citizens in the utmost truth that warns against their greatest enemies, alcohol and other narcotics. Let us rise to the emergency, make the truth our own and give it to others.

MARY H. HUNT.



Concord Bridge.

"The year's
at the
spring,
And day's
at the
morn,

Morning's
at seven,
The hill-
side's
dew-
pearled;

The lark's
on the
wing;
The snail's
on the
thorn;

God's in his heaven —
All's right with the world."

WHY

Why do all the meadow brooks
Try to run away,
As though some one were chasing them?
Bless me! this is May.

Please tell me why the trees
Have put new bonnets on?
Please to tell me why the crows
Their picnics have begun?

Why does all the whole big world
Smell like a fresh bouquet
Picked from one of God's flower beds?
Oh, I know! it's May.

R. M. ALDEN.

"For us are coming fast and soon
The delicate witcheries of June."



Primary Lessons

THIRD YEAR

THE STOMACH

WHEN physiology was first taught in our schools, many good people were shocked at the idea of their daughters studying the different organs of the body. "It is far more modest," they argued, "for them to know nothing about what is inside of them."

False modesty of this sort, with the ignorance it entailed, was largely responsible for the errors in dress and diet of former days, and these in turn helped to make ill-health fashionable for girls and women, since they must endure it in any case.

The almost universal study of physiology and hygiene has changed all this, for with knowledge of the body and its needs has come a degree of wisdom in caring for it. Girls are dressed more simply, and romp and play out of doors with their brothers; boys learn the evil nature of cigarettes and alcoholic drinks; houses are better ventilated; food is better cooked and eaten more regularly. In a thousand ways life has improved, until nowadays one must sin with his eyes wide open if he fails to have and keep a healthy body.

Intelligence does not imply immodesty. As the child learns how marvelously his body is fashioned, and how, by giving it proper care, he may fit it to be the able instrument of his higher powers, he becomes self-reverent. It is his body, he can make it largely what he will, and in the majority of cases he will choose to keep it in health.

Food in its relation to the body is a vital topic in physiology, and the more so because errors in diet may not be promptly punished. If a person cuts his finger it pains him at once, but if he injures his stomach he may not feel the effect for years. The subject of digestion, then, must be given special attention, and should be explained in such simple language that the child will get a clear idea of how this process is carried on, and its close relation to health and life.

The present lesson presupposes that the class have taken up the subject of foods and mouth digestion, including the work of the teeth. The

next step is to find what becomes of the food after it is swallowed.

(1)

THE WORK OF THE STOMACH

The perennial interest of children in fairy stories and tales of adventure shows what a deep hold anything out of the ordinary has upon their minds. Take advantage of this fact in giving the present lesson. The story of King Midas and his power to turn everything he touched to gold will make a good beginning.

It would have been a very wonderful thing if this story were true, but just as marvelous changes really take place nowadays

Who has ever planted a seed? Perhaps you all have. What did the seeds look like? What happened to them after they were put into the ground? Tell about the plants which grew from these seeds. Do they look like the seeds they came from? King Midas himself could not have made them more unlike if he had turned them into gold.

What does the cow eat for her breakfast? Show the children a bunch of grass and a glass of milk placed side by side. Nothing could differ more in looks or taste, yet the grass the cow eats helps to make this milk.

Give other illustrations, if necessary, of familiar changes until the children think of their own, and realize that these changes taking place under our very eyes are just as wonderful as those King Midas is said to have caused.

Hold up an orange. This is a fruit we all like, and it is good for us because it helps to make us grow. But before it can do this it must be made a part of our bodies. How can this be? An orange does not look at all like our arms and legs, or like skin or bone or flesh. A very wonderful change must take place to make them alike, and we want to find what it is.

Put on the board an outline drawing of a child at table, or have such ready to show the class. We will play that this boy in the picture has just put a spoonful of orange or a bit of meat into his mouth. What is the first thing which happens to it?

As the children have already learned about mouth digestion, review it at this point, asking different ones to describe the teeth and their work of making the food fine, and also the juices of the mouth which help to moisten the food and make it easier to swallow.

Even in going this little way some change has taken place in the mouthful of food, but it does not look like any part of the body yet. What happens to it next?

Add the alimentary canal to the drawing on the blackboard, and ask some of the class to show from this where the food goes after it is swallowed. Does it drop down the throat to the stomach? Country children will have seen a

horse drinking water with his head much lower than his body. This shows that whatever is swallowed can not drop into the stomach. Explain how the walls of the throat close behind the food and push it along little by little until the stomach is reached.

Point to the stomach in the drawing. What does it look like? Make a bag to illustrate the size and shape of the stomach. Line it, and let this lining be larger than the outside so that it will lie in folds unless full and stretched out. Partly fill this bag with some substance and show how the walls of the stomach move in different directions, squeezing the food inside and making it finer yet.

What did we find in the mouth which helps to moisten the food? Tell the class that there is another kind of juice which is made in the walls of the stomach. This helps also to dissolve the food. It is called the gastric juice.

After our boy's food has been shaken about in his stomach for quite a long time, and well mixed with the gastric juice, it does not look like the orange or meat he started with. It is more like a rather thick soup.

Perhaps some of it is fine enough now to be made into different parts of the body. If it is, it soaks through the walls of the stomach, just as we sometimes strain soup through a cloth, and the tiny blood vessels in the walls of the stomach take it up and carry it all over the body.

It is part of the blood by this time, and we know the blood helps to make every part of the body grow. Some day we shall learn where the rest of the food is changed into blood, for the stomach does not do all of this work.

REVIEW STORY

Cora was on the pier watching the ducks swimming about with their little ones.

"Why do they put their heads under the water?" she asked her mother.

"Perhaps they are after worms in the soft mud. A nice fat worm is just what they like," said Mrs. Lake, "and our ducks look as if they had had a pretty good breakfast of them this morning.

"Do you see what large bunches they have beow their necks? Those are their stomachs, or crops.

"Everything the duck eats goes right down its throat into this little bag. It can not chew its food as we do because hens and ducks have no teeth.

"They have a different way of grinding their food. Watch some day and you will see them picking up bits of stone and gravel.

"These go down into the crop with the food, and then on to another kind of stomach, the gizzard. Here these stones grind the food as fine as our teeth could do, and it is mixed with different juices which help to dissolve it.

"Every part of the duck needs some of this food to make it grow. If all the food stayed in the crop or the gizzard the rest of the body could not get its share, so it must be carried to every part.

"This is the work of the blood which runs in little pipes all through the duck's body. When the food has been made fine enough, the blood takes it up and carries it just where it is needed most. The legs get their share, and the back and wings and breast. Not a single part is left out."

"Do I grow that way, too?" asked Cora.

"Ask Ralph," said her mother. "That was his physiology lesson in school to-day. But perhaps he doesn't know about ducks, so you can tell him this story."

(2)

WHAT THE STOMACH IS MADE OF

A visit to some mill in the neighborhood will be interesting and helpful in connection with lessons on the stomach, and some or all of the children can no doubt have this opportunity.

Ask such to tell the class what they have seen. If a flour mill has been visited let them describe the mill-stones, and tell what these do to the grain.

We may think of the parts of the body we have just been learning about as the body mill. Who knows the reason? We do not have mill-stones to grind up our food, but we have something else we call grinders. Where are these grinders of ours?

How many do we have? Count them. Show where they are in the blackboard drawing.

Bring a small mirror into class and let the children look at the inside of their mouths. Call attention to the bright pink color, and to the fact that the inside of the mouth is always moist in order to dissolve our food more quickly. How does it differ in these respects from the skin on the outside of the face?

If we could look into the stomach we should find its lining has very much the same color as the mouth. When there is no food in it this lining lies in ridges or folds. After we have had our breakfast or dinner these folds partly straighten out, then squeeze together over and over again till all the food is made fine and soft.

Name something you have seen which you can stretch and make larger. What do we call such things? The walls of the stomach are very elastic. When we eat they stretch out longer and larger to hold the food. When the stomach is empty it takes up very little room.

We can call the stomach a part of the body mill because it helps to make our food fine, but it is not meant to do the work of the teeth.

Who has seen a cow eat her breakfast? She

swallows the mouthfuls of grass as fast as she can bite them off without stopping to chew them at all. This is because she can do something we can not.

When she has had all she wants to eat, she lies down in the shade and the little balls of food she has eaten come back into her mouth to be chewed. We are not made like the cow, so we have to chew our food before we swallow it or not at all.

Name some things we can do or not just as we like. How is it about eating? How often do we have to take food? The stomach has to work every time we eat whether it wants to or not. If it should get sick or wear out we could not have another to take its place, so we must learn how to take care of it.

(3)

CARE OF THE STOMACH

Perhaps some of you have had the stomach ache after a Thanksgiving dinner. Do you know what the trouble was? Suppose we fill this bag just as full as we can. Now try to squeeze it. This is the trouble with our poor stomachs when we have overeaten. They are so full the food can not be moved about or dissolved by the stomach juices as it ought to be.

One way, then, in which we can take care of our stomachs is never to eat so much as to make them feel uncomfortable.

Another way is to eat only the right kinds of food. How many of you have your own special friends whom you like better than you do anybody else? We all have, and the stomach has its friends whom it is always glad to see coming down this little stairway from the mouth.

Name some of the stomach's friends. We will write them on the board: Fruit, meat, vegetables, bread, eggs, milk. These are all welcome, but they must be very fresh and good.

The stomach likes nuts and candy once in awhile, but not between meals after it has been hard at work grinding up other food and needs to rest. When shall we eat these things?

There are certain things which the stomach does not like. We must know what these are so as not to make a mistake and take them.

Some of these are pickles and spices and tea and coffee. The stomach does not like much pie or cake, or very rich food of any kind, because it has to work a great deal harder than usual to make such things into good blood, and sometimes it can not do it at all.

One day I saw a little boy all doubled up in pain. He had tried to smoke a cigarette, and his poor stomach was so indignant it had turned all his breakfast out of doors. What shall we do about cigarettes and all forms of tobacco if we want to treat our stomachs well?

Another thing the stomach does not like is any kind of drink with alcohol in it. You know how it would make your throat smart if you should get pepper in it. Alcohol hurts the stomach in much the same way. It makes its work harder, too, when much has been taken.

Some people think a glass of beer or cider now and then will not hurt them, but the great trouble is that such people never stop with one glass. They take one to-day and perhaps two next week, until by and by they can not let it alone at all, and their poor stomachs are spoiled for life.

AUTHORITATIVE QUOTATIONS

ALCOHOL A POISON

Alcohol is a poison the habitual use of which destroys more or less quickly, but none the less certainly, all the organs most necessary to life—the stomach,

the liver, the kidneys, the blood vessels, the heart and the brain.—*London Lancet*.

ALCOHOLIC LIQUORS INJURE THE DIGESTIVE ORGANS

Prominent among the substances which may irritate and injure the digestive organs are the beverages known as alcoholic liquors. This irritation, where it is often repeated or severe, causes disorders and injury of the stomach. The irritated cells pour forth an excessive secretion, and become in time, if the irritation is kept up, incapable of performing their ordinary function.—H. F. HEWES, M. D., Harvard University.

ALCOHOL MAY CAUSE DISEASE OF THE STOMACH

Every part of the body is diseased by this



fell poison [alcohol], and every organ is affected in its own peculiar manner. We have the ulcerous stomach, the dropsical abdomen, dyspepsia and jaundice among others.—PROFESSOR FALLS, in *Journal American Medical Temperance Association*.

When constantly irritated by the direct action of alcoholic drinks, the stomach gradually undergoes lasting structural changes. Its vessels remain dilated and congested, its connective tissue becomes excessive, and its power of secreting gastric juice diminishes.—H. NEWELL MARTIN, M.D., F.R.S., late Professor of Biology, Johns Hopkins University.

ALCOHOL RENDERS FOOD HARDER TO DIGEST

The action of alcohol on food is the opposite to that of water. Its tendency is to harden and preserve food and to render it less susceptible to the solving action of the pepsin. It precipitates the pepsin from the gastric juice, so that while its quantity may be increased its quality is impaired, and it is less able to do its work.—W. N. EDWARDS, M.D., F.C.S.

Alcoholic drinks are not nutritive; on the contrary, they retard assimilation and nutrition.—AUGUST FOREL, M.D., LL.D., University of Zürich.

ALCOHOL WEAKENS DIGESTIVE POWER

Under the influence of alcohol, the acidity of the gastric juice and the quantity of hydrochloric acid, as well as the digestive power of the gastric juice, is diminished. This enfeebling of the digestion is especially pronounced in persons unaccustomed to the use of alcohol.—PROFESSOR KOCHLAKOFF, St. Petersburg.

ALCOHOLIC DRINKS DELAY DIGESTION

Alcoholic drinks forced upon the stomach are a foreign substance; the stomach treats them as such, and refuses to go on with the process of digestion till it first gets rid of the poison. This irritating presence and delay weaken the stomach, so that when proper food follows, the enfeebled organ is ill-prepared for its work.—A. F. BLAISDELL, M.D., Boston.

The results of the administration of one ounce of alcohol (half the amount permitted by the physiological limit), is to decrease digestive activity to a notable extent.—J. H. KELLOGG, M.D.

TOBACCO INFLAMES MUCOUS MEMBRANE

The salivary glands are excited by tobacco to over-secretion; and if the saliva is swallowed it conveys the poisons to the stomach, causing irritation and inflammation of the mucous membrane. The muscular contraction of the stomach and intestines is increased. In moderate smokers this acts as an aperient; but if smok-

ing is carried to excess, the muscles may become paralyzed and constipation result.—W. H. RILEY, M.D., Supt. Colo. Sanitarium.

TOBACCO IMPAIRS THE APPETITE

Tobacco impairs the natural taste and relish for food, lessens the appetite, and weakens the power of the stomach. Excessive smoking produces cancerous affections of the tongue and lips.—J. C. WARREN, M.D., Boston.

The ill effects of tobacco are not confined to the nervous system. In many instances there is a loss of healthy appetite for food, the imperfect state of the digestion being soon rendered manifest by the loss of flesh and the sallow countenance.—SIR BENJAMIN BRODIE, M.D.

TOBACCO A CAUSE OF INDIGESTION

Tobacco is a common cause of indigestion. The habit of spitting, so universal among tobacco users, causes a great waste of saliva. The consequence is that not enough saliva is mixed with the food, and digestion is made difficult. Tobacco users are likely to have coated tongues, foul breath, dry mouths and throats. These are all symptoms of a disordered condition of the digestive organs.—W. E. BALDWIN, M.D.

TOBACCO WEAKENS DIGESTION

One of the more common effects of absorption of tobacco products is to impair the appetite and weaken digestion.—H. NEWELL MARTIN, M.D., F.R.S., late Professor of Biology, Johns Hopkins University.

Before superintendent and illustrious visitor.
Teacher (sweetly)—“And now who can tell me a story about 4+5?”

Frank's hand was highest, his face brightest. Who could expect aught but perfection from one looking so wise?

Frank (confidently)—“If there were four blackbirds on a tree, and five of them flew away, how many would there be all together?”
—*Ex.*

Teacher—“What is the function of the iron in the blood?”

Tommy Tucker—“It's what makes the finger nails.”—*Chicago Tribune.*

The sun had on a crown
Wrought of gilded thistledown,
And a scarf of velvet vapor
And a raveled rainbow gown;
And his tinsel-tangled hair,
Tossed and lost upon the air,
Was glossier and flossier
Than any anywhere.

JAMES WHITCOMB RILEY.

MAY

May shall make the wild-flowers tell
 Where the shining snow-flakes fell:
 Just as though each snow-flake's heart,
 By some secret, magic art,
 Were transmuted to a flower
 In the sunlight and the shower.
 Is there such another, pray,
 Wonder-making month as May?
 FRANK DEMPSTER SHERMAN.

OBJECTIONS TO TEMPERANCE TEACHING ANSWERED

OBJECTIONS TO THE LAW

1. "The law requires the use of text-books. This is irksome and archaic."

The law provides only that text-books shall be in the hands of pupils when other branches are thus studied. There is, however, a peculiar need of text-books in teaching total abstinence, because a current literature, backed by many powerful influences, is so largely against it.

2. "The law makes the Woman's Christian Temperance Union the judge of both the teaching and the text-books used."

This is wholly an error; there is not a line or a word in any law to justify it. The choice of temperance physiologies is in the hands of the same board that chooses other school books.

3. "Teachers can not teach the nature of alcoholic drinks and narcotics because they are not expert scientists."

The law does not require everything on the nature and effects of alcoholics to be taught, but only that pupils, as fast as their advancement fits them to receive, are to be taught the great, fundamental, practical and well attested facts which it is necessary for them to know for their personal safety and for intelligent citizenship. The little toddler, hardly able to light his cigarette or hold his beer glass, may receive some warning truth. The most expert scientist has not reached the "ne plus ultra."

4. "The time demanded by the law is too much and involves tedious repetition."

The law specifies no limit of time. Information adapted to grade is supposed to be required. Tedious repetition is employed only by tedious teachers.

5. "But primary classes should be excepted. It is cruelty to teach little children the horrible effects of alcohol and narcotics, and tends to nightmare."

See answer to number 3. It is not cruel to teach the baby even by the aid of some slight pain that fire will burn him, and it may not be cruelty but wise kindness to teach the primary grades some of the elemental and practical facts about alcohol and narcotics. Elemental, but not all the ultimate facts are taught about color, form and number.

OBJECTIONS TO THE TEXT-BOOKS

1. "It is puerile and tyrannical detail to say in what part of the book the temperance matter shall be printed, and exactly what fraction of the book or how many pages shall be devoted to it."

If all business, political and social interests were united in desiring first class temperance teaching, as is the case with other branches, conditions would be greatly simplified and details could be largely omitted; but with a large fraction of all these interests against such teaching, some careful details become necessary. But the law does not prescribe exactly what space shall be devoted to temperance; it draws only the minimum line, and certainly there is a minimum if temperance is to be taught at all. To say that the hygiene of an organ should be put beside its anatomy and physiology, and not shut in solitary confinement at the end of the book, seems good common sense and good pedagogy. Incidentally, it is in accordance with the interests of up to date, well graded text-books, well adapted to use, instead of old books revamped. Both physiology and hygiene are progressive.

2. "The physiology is taught for an object, or as a platform from which to preach temperance."

All good teaching is teaching for an object; all good teaching is to build a platform from which to teach right living. The great gain from the study of the anatomy and physiology of the body is that we may better understand its care and its use. A text-book for young farmers might deal, somewhat, with the anatomy, physiology and life processes of the potato plant, but this would be simply a platform from which to teach how to protect the plant from its enemies, secure its best development and harvest its best product.

3. "Children see parents and friends in good health who drink and smoke and thus know the text-books are wrong."

On this plan the text-books could be proved in error whatever physiological law they taught. The penalty of violated law is often not immediately apparent, especially to inexperienced observers, therefore the more need of wise teaching of tendencies and ultimate results.

4. "Teaching facts does not make character. Knowledge does not save."

No; but it tends to. The engineer may disregard the red flag, still it pays to raise it, and it may be criminal not to do so.

5. "Experts differ."

Yes, in some details, but if nothing is decided except by perfect unanimity then nothing is settled. But there is practical unanimity among experts who have honestly given themselves to the thorough study of the beverage use of alcohol on individuals and nations and ages, and

they find that it has been and is bad, very bad, and life insurance statistics give this result new and irresistible confirmation.

6. "An author of one indorsed text-book has said that he did not believe what he said in the text-book, but put it in for Mrs. Hunt's indorsement and to facilitate its sale."

When this statement first appeared, several years ago, a letter of inquiry was sent to every author of the indorsed physiologies, all of whom indignantly denied ever making such an assertion.

7. "The Cambridge Physiological Congress declared it wrong to teach that alcohol is a poison."

Please re-read the facts. What this Congress did say was that if a poison is something that is always harmful, then alcohol can not fairly be called a poison. That proposition is a very safe one and antagonizes nobody. But it seems rather wasteful of ink and good breath.

8. "The text-books give dreadful pictures and stories to harrow up the feelings of the children."

Doubted. It is not the text-books but here and there an untaught teacher who errs in this way. But the Committee of Fifty find that seven thousand children in the United States are deserted every year by their parents on account of drink, and there are uncounted thousands more from whose homes all natural child life and joy has fled because of drink. Reasonable hope for the future of such children hardly lingers. Some pain is a necessary incident to the cure of such diseased conditions.

MISCELLANEOUS OBJECTIONS

1. "The teachers are not interested."

This is true in many cases. Most teachers have had no training in the normal school, institute, or elsewhere for teaching this topic. Remedy, interest the teachers. Train them for the work, not dishearten them in it.

2. "Pupils are not interested."

Doubtless this is often true. But neither would they be interested in any study in which the teachers are not. For remedy see the preceding answer.

3. "Alcohol in sickness may be a priceless boon."

Not a pertinent objection. The text-books do not undertake to supersede the family doctor.

4. "There is more harm in overeating than in drink."

A very old chestnut. Text-books in physiology should teach the laws of nutrition and of diet, and they do. But overeating rarely makes a man crazy. Good restaurants are not incitements to crime. Food in plenty tends

to the best manhood. Liquor in plenty tends to debase and brutalize.

5. "Total abstinence teaching in the schools condemns many parents and friends, causes pain to scholars, and disrespect and offence in the home."

So would the teaching of moderation in drink. So does the teaching of politeness or of any virtue, whether in the day school, magazine, pulpit or Sunday-school. We can not omit to teach because the truth condemns somebody. Victor Hugo says: "The great enemy of the night is the morning."

6. "The Woman's Christian Temperance Union, or Mrs. Hunt, makes money out of the text-books, and is financially interested to push their sale."

Mrs. Hunt has given a quarter of a century to this work without salary. Contrariwise, she has spent a large sum from her own private resources which has never been returned to her, and nobody rises to tender it. Neither the Woman's Christian Temperance Union nor Mrs. Hunt has received a penny in royalty on any of the text-books, or any money for indorsing the same. Mrs. Hunt is under large expense for travel, for translators, stenographers and many co-laborers which has been only partially met by the Woman's Christian Temperance Union and by generous friends.

7. "Sandow drinks and is strong."

Samson did not drink and was stronger. Individual cases prove possibilities. A multitude of related facts in proper classification alone prove a law.

8. "Cases where alcohol leads to excess are the exception and not the rule."

City Attorney Pickett of New Haven used to tell a story of a gentleman out driving one Sunday afternoon. As he passed a farm house where several children were playing about an open well in the front yard, he suggested to the ancient granger who was enjoying his siesta on the turf that there was danger in leaving his well and his children so exposed. He got this reply: "Stranger, I reckon not more than one child in three years has fallen into that well since the ten years I have been here." Such stupidity marks the story as made to order by a temperance crank, but when the record of the largest mutual life insurance society in England shows that for thirty-two years, from the most carefully selected classes, thirty-eight per cent. more moderate drinkers die per thousand than total abstainers, we are more stupid than the sleepy granger if we do not heed it, and we out-Herod Herod if we do not try to help it.

JOHN B. SMITH,

Author of Supplemental Temperance Lessons
published by the *Sunday-School Times*.

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"Oh, sing! the swallows are in tune,
Forget the rain of yesterday;
A few more suns will bring us June,
And this, 'tis Chaucer's month,—'tis May."

EDUCATIONAL REFORMS HAVE ORIGINATED OUTSIDE THE TEACHING PROFESSION

WILL the boys and girls in my schoolroom add to the strength or weakness of this republic? is the serious question facing every teacher in the land. The chances that they will be sources of strength will be enhanced if the law requiring scientific temperance instruction is well enforced. Indeed, so great is our menace from alcoholic drinks and other narcotics that it is not too much to say that the twentieth century civilization is pending on its rising populations being now taught the full truth about the nature and effects of these substances, in connection with the laws of health. The breaking down of the civilization of a nation is first preceded by decline in the character of its citizens. Decline in character due to alcoholism will be prevented if every teacher is now faithfully teaching this special study.

All educators claim to believe in the study, but recent objections of certain educational folks to details which are absolutely essential to the enforcement of any temperance education law remind us of the man "down East" who said he "believed in the Maine prohibitory law, but was ag'in its enforcement." In view of the average high character of public school teachers, any objection from that source would be unaccountable if men in their own ranks had not shown that other progressive steps in education have not originated within the educational profession, but outside, and have been at first opposed, though ultimately ardently supported.

Supt. Barney Whitney, of Ogdensburg, N. Y., in the April number of *New York Education*, says of another important school measure:

"The most serious difficulties to be overcome in this reform movement are the conservatism and prejudice of teachers, the influence

of traditional customs and established forms of organization and instruction.

"It is too generally assumed that educational reforms originate with the teaching profession and are wrought out by it.

"In the language of another:—'We forget that we are, probably, not great men, that our thinking is hired thinking and, in consequence, perhaps not the best thinking.'

"We overlook the history of the past and fail to see the movements of the present.

"Our vision is thrown into the false perspective by our nearness of view. We give little heed to the forces without and fail to recognize that most reforms are due to influences and conditions outside the school, over which the teacher has little control.

"Public kindergartens are due to no efforts of the teaching profession. They were opposed by the public school teachers as an unwarrantable interference and harm to public school teaching. The kindergarten was introduced into the public schools in spite of the teaching profession.

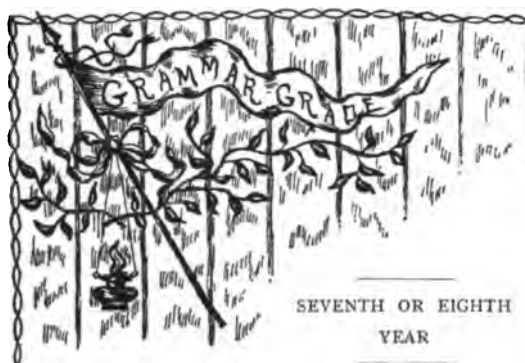
"The present trend of education through expression—that mind and character are developed in proportion as the motor activities are given free play—is due to the philosopher and not to the teacher.

"Drawing was introduced into the schools of this country by the influence of manufacturers and business men of Massachusetts.

"At a national convention of school superintendents, eleven years ago, I listened to one of the most specious, unfair and prejudiced arguments against manual training in the schools, by two of the most noted and reputable school men of this country. In less than five years they became warm advocates of manual training in the public schools, both upon sound educational principles and for its practical value. To outside influences is due its present established incorporation into the public school system and not to the teaching profession.

"The conception of the 'Junior Republic' to take the place of the conspicuous failure of reform schools, and the successful working out of the plan is due wholly to a young business man reared upon the farm."

In the light of this evidence, so ably presented by Supt. Barney, we may look upon this flurry of opposition by certain teachers as a phase in educational experience which will eventuate in better thinking. It is a phase, however, which is intensified by the stealthy influence of the great liquor traffic whose ambushed movements are based on the fact that if the drink habit is fastened on a boy his future money-earning power is thereby mortgaged to the brewer and distiller. Nevertheless, right views and right actions are sure to win in the end.



THE FRAMEWORK OF THE BODY

IN the great stock yards and packing houses of the West every part of the animal is utilized. Indeed, the profits of the business come from the hair and bones and other portions which can not be used for food, and which less thrifty dealers would throw away.

We must learn to be as economical in dealing with human lives. The school does not fulfil its mission if it produces educated invalids or moral degenerates. It is the nation's nursery for fostering the growth of every organ and faculty of the child, and there should be no waste products.

"Health of body helps health of soul," and the youth who enters the business world with firmly knit limbs and abounding health, together with a trained mind, is twice armed against any form of temptation.

One of the fundamental topics, therefore, for pupils to acquaint themselves with is the framework of the body. A knowledge of its mechanism is requisite to its intelligent care, and as each set of organs is thus studied in their relation to the body, the youth learns how to bring his whole nature to its highest development, and to guard against every encroachment of intemperance, vice and disease.

FUNCTION OF THE SKELETON

The manner in which a subject is presented does much to kindle the enthusiasm of a class or arouse their prejudice. Bones in the abstract are dry and uninteresting, but in the living, breathing individual they too pulsate with life, and this is the connection in which to study them.

The first thing to notice is the great advantage which the possession of a skeleton gives to all animals fortunate enough to have one. What is this advantage? Collect specimens or pictures of various forms of animal life and notice how each is supported and held in place. Arrange those specimens having a framework in one class, and those which have none in another. Find in which class the animals are

unable to hold their bodies erect. How is this a disadvantage?

Make a comparison of different kinds of skeletons. Have the class find whether all animals have an inside skeleton. Describe the skeleton of the clam, lobster, turtle. Notice the framework which supports the butterfly, the bumble-bee. How does this differ in each case from the framework of other animals studied?

Find what the skeleton of a plant is, and how it determines the shape of the plant. Ask the artist of the class to sketch on the board the skeleton of a tree, and another of a leaf. Of what use is such a skeleton to the plant?

Bring out the difference in structure between vertebrates and invertebrates, and have the class study the skeleton in several specimens of each. Find how the skeleton of a fish differs from that of a dog, or a bird, and how man's skeleton is unlike all of these.

A good way to show the different functions of the human skeleton and bring to mind the many ways in which it is essential is to imagine what one could do without it. Have the class try this experiment and write their conclusions on the board.

ARRANGEMENT OF THE SKELETON

Notice in what part of the body the skeleton is placed. Why is this a better arrangement for man than to have had an outside skeleton like a crab or snail? Look at a large chart of the skeleton and notice the great number of bones which go to make it up. Why are so many needed?

Classify the bones according to their shape, and write opposite each division the places in the body where such bones are found. Account for the rounded shape of the bones in the head, thorax and pelvis; the long, slender bones of the leg and arm; the many small bones of the spine, the hand and foot.

Find what the different bones of the body are used for; then how their shape exactly fits them for their work. Make a list of those bones which protect some part of the body. Find others which are mainly for support; for strength; for great variety of motion; and so on until all have been classified.

Observe how the bones are fastened together, and in what ways they differ from joints. Why are both bones and joints needed in the body? Compare the different kinds of joints as to freedom of motion, and show how each kind is adapted to its particular work. Find how the hip joint differs from the ball and socket joint of the shoulder, and whether the hinge joints of the arm and leg are alike in all respects.

Saw a thigh bone in two lengthwise and find whether it is of the same structure throughout. Why is such a bone larger at the ends than in the middle? Contrast the red marrow in the

heads of long bones with that found in the bone shaft, both as to appearance and use.

Select some familiar animal and compare its skeleton bone for bone with that of man. Find, for instance, what bones in a bird answer to those in a person's arm and hand; to those in his lower limbs. Pictures or drawings should be used to make this comparison of the most value, and should indicate differences in structure as well as in size and shape.

GROWTH OF THE SKELETON

Find what are the general conditions upon which all growth depends. Food will be recognized as one of the most important. Have the class ascertain what special kinds of food are needed to develop the bones. To determine this point they must first learn of what material bone is made. Teach them to consult dictionaries, physiologies and all available sources of information for themselves in answering such questions.

Burn a bone to show the mineral matter it contains; soak another specimen in dilute hydrochloric acid to reveal the animal portion. Compare the two pieces experimented on and find what properties of bone are due to each of these substances. Why are both animal and mineral matter necessary?

Notice the bones of a young animal and those of one which is old. Find how they are unlike in size and structure. Decide what difference there should be in the food of each on this account.

Call for lists of foods especially rich in bone-making material. Why is milk the best food for little children? What other foods should be added to further the growth of the bones as the child grows older?

Review the process by which food gets to the bones after being taken into the body. Determine also how fresh air and sunshine can aid the growth of the bones.

Ask for reasons why a child's bones are more easily bent out of shape than an older person's, although the bones of the latter break more readily. Why is it specially important for young people to sit and stand erect, and to have chairs and desks exactly suited to their height?

Show how ill-fitting shoes and tight clothing deform the body by bending the flexible bones of the foot and waist out of shape. Find what organs of the body are thus displaced and hindered in doing their work. Call attention to the vital character of many of these organs and the serious effect which their displacement must have upon the health.

Every one desires to be tall and well proportioned, but most young people fail to realize that it is largely in their own power to determine the kind of bodies they will have. Make it clear to them that size and height and grace of motion depend very much upon the care they take of themselves, and that just as a rough, stony piece of ground can be transformed into a beautiful field, so by attention to diet, to exercise, to clothing, to whatever promotes health and strength, the human body can be improved and made lovely.

EFFECTS OF NARCOTICS UPON THE SKELETON

An old Greek legend describes a curious enclosure called the labyrinth. The entrance was flowery and attractive and it seemed easy to retrace one's steps at any moment.

But once within those winding paths there was no escape. Each new turn led to fresh mazes and more intricate windings, until, sooner or later, the hapless victim came upon the minotaur itself, the hideous monster which inhabited the labyrinth.

The beginnings of intemperance are as enticing and as deadly. The glamour which surrounds the first mild glass of liquor or the first cigarette conveys no hint of the ruin to mind and body which lurks in their train, but it is always there and we must so teach our pupils.

Nature makes no mistakes in her book-keeping. Every debit or credit is entered and finally the account is balanced. Make this plain in connection with the present lesson.

After studying the construction of the framework of the body, its relation to other organs, and what each person can do to further its development in himself, turn to the other side



"A million wings unfold to-day,
A million flowers awake."

of the subject and find how growth is checked by the habitual use of narcotics.

This will involve a knowledge of the nature of alcoholic drinks and tobacco. Have the class find by reference to text-books and other authorities why these substances are harmful, even in very small quantities. How do they differ in their effects upon the body from food and the other necessities of life?

Review all the essentials to the growth of the bones, and find whether narcotics can furnish any of these necessities. What do they give instead? If strong drink gives no aid to the body, in what does its strength consist?

In building a battleship the contractor takes into account every emergency of storm and conflict. He does not build for fair weather or for peace. We must fashion our bodies in like stalwart fashion, building into bone and sinew a reserve strength to serve us in our own times of need, and to be transmitted to the generations which come after us.

AUTHORITATIVE QUOTATIONS

ESSENTIALS TO GROWTH

At any specified age, children of both sexes who live in conditions of favorable nurture are, on the average, both taller and heavier than those of less favored nutritional conditions.—*American Journal of Psychology*.

The essential factors in growth are:

A wholesome diet, properly selected and adapted to the needs of the individual, and taken with moderation.

Abundance of pure air, and proper breathing.

Daily bathing.

Exercise systematically engaged in, whether it be in the performance of home duties, in the garden, or in the gymnasium.—*Dietetic and Hygienic Gazette*.

CORRECT POSITION

The correct position is head up and chin in, chest expanded, and shoulders back and down. In this position, frequently practice breathing by long continued inspirations. As you draw in your abdomen, swell out the sides of your chest and protrude the sternum (chest bone). Night and morning, while your chest is thus inflated, practice briskly rubbing the chest from the sternum backward with the palms of the hands.—CHAS. DENISON, A.M., M.D.

USE OF NARCOTICS IMPAIRS NUTRITION OF THE BONES

Faulty nutrition of the bones, from the use in youth either of alcoholic drinks or of tobacco, prevents their full development and consequently affects the stature.—H. F. HEWES, M.D., Harvard University.

STRONG DRINK RETARDS GROWTH

Strong drink is received into the living growing system, and the result of its presence is to render growth less perfect, decay more rapid, life less vigorous, and death less remote. Alcoholic drink is especially harmful to children, retarding their growth and development.—Dr. VACHER, F.R.C.S., Medical Officer of Health of Cheshire.

Children of alcoholic parents, trained to the early use of liquor, are stunted in their growth, and a French physician is inclined to ascribe to this fact the decrease in the standard of normal height shown by statistics in that country.—*Jour. Am. Med. Ass'n*.

STRONG DRINK STRONG ONLY TO DESTROY

In whatever way alcohol acts on the body, whether it acts slowly and by successive steps, or rapidly, so as to produce all its evil action in one sharp charge, it acts as a reducer of the powers of life. Never let this lesson be forgotten in thinking of strong drink, that the drink is strong only to destroy. It never by any possibility adds strength to those who drink it.—W. V. BLIGHTON, M.D.

ALCOHOL MAY CAUSE BONE DISEASE

It is known to physicians that serious bone diseases are sometimes due to the continued drinking of alcohol; also that the action of alcohol on the periosteum may render that membrane incapable of forming healthy bone from materials supplied by the blood; thus causing bad nutrition, leading to disease of the bones. Surgeons find that broken bones of habitual drinkers do not unite as readily as those of other patients.—H. NEWELL MARTIN, M.D., F.R.S., late Professor of Biology in Johns Hopkins University.

TOBACCO STUNTS GROWTH

Witness the great number of the young who smoke nowadays, and how many promising youths must be stunted in their growth and become a physical and mental wreck before arriving at man's estate? Look at the pale young face, imperfect development, and deficient muscular power of the cigarette fiend?

—T. H. MARABLE, M.D.

TOBACCO AN INJURY TO THE GROWING BOY

Tobacco in any form is a great injury to a growing boy, and the fashion of inhaling the smoke and then forcing it through the nose is deadly in its effects. It causes catarrh in the air passages, throat, and nose, and makes the smoker disgusting as well as puny and stunted. A cigarette-smoking boy will not make a strong man. But the mischief does not stop with the individual; it is transmitted to his offspring.

The acquired irritability, imperfect development, and loss of nervous force of the father are inherited by the child who, in turn, impairs his health by the same process, so that in the course of three or four generations there must be a great deterioration of the race. The sale of cigarettes to boys should be prohibited by law.—*Journal of Inebriety*.

"Violet! Violet!

I wonder how you knew!

All the earth is cold and wet;

Not a tree has budded yet;

Tell me, will you?—tell me true!

Did God whisper 'Spring' to you?

"Violet! Violet!

I never should have known.

'No,' I said, — 'no flowers yet!'

Then beneath the brown leaves wet,
Hiding near a mossy stone,
There I found you all alone!"

"Bliss was it in that dawn to be alive."

"Account yourself happy if it be your lot to espouse some noble and unpopular cause in the beginning, to stand by its cradle, to throw yourself on its broad altar, to see it grow, to help it grow, to see it first arouse curiosity, then attention, then contempt, then hatred, then fear, then respect, always growing and growing until, at last, over prejudice and hate and party and old customs and vested interests, the irresistible current makes its way.

HON. GEORGE F. HOAR.

Spring's last-born darling, clear-eyed, sweet,
Pauses a moment with white twinkling feet,
And golden locks in breezy play,
Half teasing and half tender, to repeat
Her song of "May."

SUSAN COOLIDGE.

Boston Mamma. — "Suppose you have four bunches of grapes, Willie, and eat three, then what would you have?"

Boston Boy—"Appendicitis."

BIRDS IN SPRING

Listen! What a sudden rustle
Fills the air!

All the birds are in a bustle
Everywhere.

Such a ceaseless croon and twitter
Overhead!

Such a flash of wings that glitter
Wide outspread!

Far away I hear a drumming—

Tap, tap, tap,
Can the woodpecker be coming
After sap?

What does all this haste
and hurry
Mean, I pray —
All this out-door flush
and flurry
Seen to-day?

This presaging stir and
humming,
Thrill and call?
Mean? It means that
spring is coming.
That is all!

— *Sel.*



"Sweet May hath come to love us,
Flowers, trees, their blossoms don;
And through the blue heavens above us
The very clouds move on."

CHILDREN SHOULD BE TAUGHT TO BE THRIFTY

A savings bank account is a great incentive to thrift in children. If one is begun for the baby, even with a very small sum, and added to through childhood and youth with a certain proportion of the money that otherwise would be spent carelessly and thoughtlessly by the child, there will be

a very respectable amount on the credit side of the ledger when the depositor is eighteen years old. The habit of self-denial is not the least of the substantial benefits that follow a wise economy of money.

— *April Ladies' Home Journal*.

"Mamma," said four-year-old Willie, "when I grow up I'll be a man, won't I?"

"Yes, dear," replied the mother, "but you must remember to be neither selfish nor lazy."

"Why, mamma," queried the little fellow in astonishment, "do boys who are selfish and lazy become women when they grow up?"—*Ex.*

NINETEENTH CENTURY NOTES

VII. THE LAST QUARTER CENTURY

M. DE LAVELEYE, the well known political economist, once said that the message of the eighteenth century to the nineteenth was, "Thou shalt cease to be the slave of nobles and despots who oppose thee; thou art free and sovereign." The political realization of this sovereignty was nearly accomplished by the nineteenth century. But as the closing years of the eighteenth century struck for the nineteenth its key-note, so in the last quarter of the nineteenth the stirring of those forces could be discerned which it may reasonably be believed are to dominate the newly opened twentieth century.

"It is no empty exaggeration," says Dr. Joseph Cook, "to say that the nineteenth century has made the whole world one neighborhood. The twentieth ought to make this one neighborhood into one brotherhood. The world was once like a block of marble: struck on one side, the other side did not quiver. But it is now like a mass of sensitive nerve-fibre; wound the modern world anywhere, and it winces everywhere."

The rapid and wonderful improvements in the means of communication did much to promote this neighborliness, especially in the last quarter of the century. Swift, silent messages flew through air and sea over the wires of telegraph and cable. The telephone made communication by the spoken word possible. The slowly written and slowly read autograph letter gave way, in the business world at least, to the clear type-written page, while the letters themselves and their writers were whirled across continents and oceans by swift flying trains and powerful ocean steamers.

In making such rapid transportation possible, science and human ingenuity had conquered innumerable natural obstacles. Mountains were scaled and tunneled; chasms, canons and great rivers spanned with bridges. The snows of mountain peaks, the sands of the plains, the seemingly impassible walls of rock, were all overcome, until it became a saying that no engineering feat was impossible provided money enough could be had to carry it through. It was a far cry, for instance, from the simple wooden bridge over a quiet New England stream, to the slender but unyielding steel structure spanning a gorge in the Peruvian Andes, bearing a railroad track which at one end emerged from a tunnel through the side of the cliff, and at the other plunged directly into the opposite mountain.

Within narrower limits, the trolley-car, the bicycle, and the automobile, all perfected in the last quarter century, helped in making the world "one neighborhood."

Throughout the century, under the strong current of political thought and progress, had run another current from the same source, manifesting itself somewhat differently, yet a part of that rallying cry of the early nineteenth century, "Liberty, equality, fraternity!" "It covered," says Mr. Brooks in his "Story of the Nineteenth Century," "a course of action designed to benefit others rather than ourselves. Selfishness, which has been the curse of the world for ages, has had its hardest knocks in this progressive nineteenth century." Society found itself confronted with the vital question, as expressed by M. de Laveleye: "It is a grand thing to be free and sovereign, but how is it that the sovereign so often starves? how is it that those who are held to be the source of power often can not, even by hard work, provide themselves with the necessities of life?"

Individuals, organizations, and governments set themselves with more or less seriousness to studying this problem. Workingmen's associations multiplied. Laws tending to alleviate the conditions of the working classes were passed in many countries. Germany instituted a system of compulsory insurance by which state provision was made for laborers disabled by sickness, accident or old age. Yet the subtle relations between employer and employed can not be settled off-hand by mere legislation; the human element is too dominant in these relations, and humanity has not yet made progress enough in the broad spirit of love and common brotherhood for either side to act as a rule with perfect unselfishness. Here and there experiments are being tried looking toward a solution of the problem, a solution, which is, however, still hidden in the unknown future of the twentieth century.

But while the great issue of industrial relations remained unsettled, events were taking place which showed that the world "neighborhood," was really moving on toward the world "brotherhood."

In 1882, the Salvation Army began in England its self-denying practical work among classes which other influences had hitherto failed to reach. "Social settlements" of university and college men and women brought glimpses of true home life and genuine mental and moral uplift into the dark corners of the great cities. Philanthropic institutions, such as hospitals, homes for the poor, the helpless and the afflicted; philanthropic organizations, ministering to almost every special human need, multiplied in behalf of the poor, the sick, the unfortunate, the homeless child, the forsaken aged, the prisoner, the soldier, the sailor, the lumberman in distant camps. The problems of crime and poverty led to a widespread study of their causes and the means for dealing with them. Prevention came to be seen as better

than reformation, and education to be "the first step toward making men really men."

Nor were the impulses toward brotherliness confined by national limits. Famine in Russia and India, massacre in Armenia, or floods in America, called out from all parts of the world a practical sympathy which brought substantial relief to those in distress. But in the complicated machinery of international government relations, change came more slowly. As undreamed-of resources in parts of the earth hitherto little known were found out, and the industrial and commercial activities of civilized nations were stimulated by discoveries, inventions and a wider knowledge of the world's needs, there came a struggle for the markets of the world, and for the possession of territory. Asia, Africa and the sea islands became dotted with the flags of many nations seeking to extend their "spheres of influence" which, when their bounds were definitely set at all, were all too often outlined in blood. Mutual national jealousies often checked popular impulses from interfering in behalf of humanity, as in the case of the Armenian massacres in 1895, yet, before the century closed, the world

was taught a new lesson in national responsibility and self-sacrifice as the great free nation of the West came to the help of Cuba and ended forever the medieval dominion of Spain in her long oppressed colonies.

Wars and rumors of wars were rife even up to the end of the century, yet signs were not wanting that the day when war will be relegated among the barbarisms of the past is not an idle dream. The drain upon national resources to maintain great armies and navies, the deadly perfection of the instruments of war, the suffering entailed by it, the settlement by arbitration of international difficulties that less than a century before would have been considered ample reason for war, the World's Peace Conference, all these were "straws" showing that the world, though with painful slowness, was moving toward the day of international brotherhood.

Politically, the quarter century was far from unfruitful although, as we have seen, its work in this direction was chiefly accomplished before 1875. The United States, firmly reunited after a long period of strife and actual separation, though confronted with serious racial, social and municipal problems, was developing educationally, industrially and commercially, and rapidly advancing to the front rank among nations, while at the very end of the century new and unlooked for responsibilities were laid upon it in the care and guidance of the races which had come under its protection.

Great Britain during those years had extended the right of suffrage, making it practically uni-

versal, and had strengthened the ties between the mother country and her foreign colonies where nations were growing up with a large measure of self-government, though owning a common allegiance to the crown of England.

On the continent, France, contrary to expectation, had preserved her republican government for nearly thirty years, which, having survived the overzealousness of friends and the intrigues of enemies longer than

any previous government since the days of her kings of the eighteenth century, seems, at the opening of the twentieth century, likely to endure.

Her neighbor, Germany, from a loose confederation of states, had become compacted into a powerful empire, although as yet without real popular sovereignty. "In the United States," says Professor Andrews, "sovereignty rests with the people; in England and France with the popular chambers; in Germany with the Emperor." It can not be denied that this imperial sovereignty has done much for Germany, which, as it were, with the eagerness and strength of youth, had a mind to dare and to accomplish any desired end for the glory of the "Fatherland." Fostered by the government, educational, military, naval, industrial, commercial and colonial enterprises were all set on foot and pressed with untiring energy.



From Munsey's Magazine.

"One of the most difficult feats of railway engineering ever accomplished."

Farther to the east, Japan became, in 1889, a constitutional monarchy, adapting to its own needs with unparalleled rapidity and success the methods and manners of the West. In the same year, the last royal power in the New World fell, and Brazil joined the sisterhood of South American republics where, it has been well said, "although revolution succeeded revolution, never once did these nations let go the central fact of republican independence."

Thus the century drew to its close with individual and constitutional liberty largely won, and while class and international jealousy and avarice showed that ancient passions had by no means yielded their citadels, their defences were being undermined by that broadening charity and sympathy in interests among mankind which are an earnest of the golden time that is to be.

BOOK NOTICES

ELEMENTS OF THE THEORY AND PRACTICE OF COOKERY, by Mary E. Williams, supervisor of cookery in the public schools of New York city, and Katharine Rolston Fisher, formerly teacher of cookery in these schools. The MacMillan Company, New York. Price \$1.00.

A few years ago the teaching of cookery in public schools was unheard of. To-day it is given an important place in the curriculum of many of the leading schools and is rapidly being extended to others. The text-book noted above is one of the best of its kind. It is intended both as a hand-book for reference and study and as a manual of directions for actual work in the kitchen laboratory. By its aid the pupil can work independently of the teacher in large measure, and thus soon acquire the confidence and skill which result from actual practice. The style is clear and simple, and the directions easily followed. This book should go far towards making the study of cookery practical, and thus have a direct bearing upon the welfare of American homes.

NEW METHODS IN EDUCATION, by J. Liberty Tadd. Orange Judd Company, New York. Price \$2.00.

One can not even turn the pages of this book without realizing the success of the author in combining theory and practice. He believes that man acquires dignity in proportion as he acquires power, and that there is no greater joy in life than that which comes from the ability to use well every trained faculty. This is the keynote of the book, and in its presentation of drawing, modeling, wood carving and kindred topics it shows the remarkable educational power of these methods when rightly used. The book is profusely illustrated and very attractive from every standpoint.

YOU CAN

Have your last season's outfit dyed or cleansed and refinished so it will look like new by our French process. Why discard soiled clothing when it can be overhauled and worn as second best? You can

RELY ON

our methods of cleansing, and need not hesitate to trust us with articles of the most delicate textures. We dye or cleanse and refinish PROPERLY, ALL materials of household use and clothing of all kinds.

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THE SCHOOL PHYSIOLOGY JOURNAL



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Vol. X.

BOSTON, JUNE, 1901.

No. 10.

THE ROSE OF THE YEAR

MARCH is a trumpet flower,
And April a crocus wild;
May is a harebell slender
With clear blue eyes of a child;
July is the cup of a tulip
Where gold and crimson meet,
And August a tiger lily
Tawny with passion and heat;
But June is the rose of the world,
Precious and glowing and sweet!

Fair is the flush of the dawning
Over the face of the sky;
Sweet is the tangle of music
From wild birds fluttering by;
Brilliant the glow of the sunset,
And graceful the bound of the deer;
Glad is the laugh of the children
Ringing like joy-bells clear;
But what can compare with *thy* beauty,
O red, red rose of the year!

MARY E. BLAKE.

THE ALCOHOL QUESTION

MY present views on the alcohol question came to me in the following manner:

Brought up in the midst of a country of vineyards on the Lake of Geneva, I considered wine an almost indispensable part of human food, being accustomed from childhood to drink some daily. I was given wine to strengthen me, to form blood and God knows for what all. The possibility of an abolition of the use of alcohol never came to my mind. I never had seen a total abstainer.

Thus I grew up. I suffered much from disorders of digestion, later from cardialgia and headaches, without having an idea that two or three glasses of wine a day might have something to do with it. I studied medicine. My teachers all taught that those suffering from alcoholism must get alcohol or they would die of collapse. Abstinence was never spoken of.

In 1873, I became an assistant at v. Gudden, at the Hospital for the Insane at Munich. There, the drinking of wine was replaced by the drinking of beer, and my disorders of digestion became considerably worse. I realized this, but believed that I ought to drink beer, although in great moderation.

In 1879, when I became director of the Burghölzli Hospital for the Insane, and Professor of Psychiatry at Zürich, I made a first weak attempt and recommended my numerous alcoholics to avoid all alcoholic beverages, and

did not give them any for some time after the delirium was over. I, however, went on drinking and so did the attendants, and all the other patients and everybody outside. My words remained words, and all my efforts to turn my alcoholics into permanent water drinkers were in vain.

About 1884, I happened to send for a shoemaker in the neighborhood, Mr. J. Bosshardt, to take my measure for shoes. After this had been done I offered him a glass of wine. He declined with a smile. I was surprised and asked if he was a temperance man. "Yes, sir." "Total abstainer?" "Yes." We rapidly came to an agreement. Every alcoholic who was improving was sent with an attendant to the shoemaker. With a touching self-sacrifice and with the greatest insight the poor man devoted himself to the patients. His recompense was their recovery. And for the first time in my life I saw drunkards recover, truly and lastingly cured. One day I said to Mr. Bosshardt: "Please explain to me how it is. I am paid by the State to cure these people, and I can not do it. You are the one who cures the drinkers, not I. Why can I not do it? I am deeply ashamed." He answered briefly with a smile: "It is very simple, Director; I am an abstainer and you are not. That is the secret. You can not teach others convincingly that which you do not do yourself."

From that day (1886) I became an abstainer. It is true I was afraid it might hurt my health, so deep were the roots of prejudice in my head, but the anticipated weakness and anæmia did not come. Instead of this, I lost my cardialgia within three months, and also within ten years traces of gravel promising gout and, after a while, my formerly frequent headaches. Mental and physical efficiency were increased in a manner not foreseen. The greatest mental over-exertions were stood with ease.

Since then I have published in a shorter time twice as many scientific and other papers as before, and have used every short leave of absence of four weeks for rapid journeys to tropical countries or into the mountains for the study of ants. I had periods of two years with hardly a day of rest. I never could have foreseen or believed that giving up two or three glasses of wine a day could strengthen me to such an extent, and yet it is literally true.

By such experiences my views on the alcohol question became thoroughly cleared. I had begun with the idea that I was making a sacrifice to the cure of my patients, but I soon began to realize that I, together with nearly

everybody in my country, had for thirty-eight years been the victim of a gigantic prejudice. The cure of the drinkers soon appeared as merely the first step, as the beginning of a great work of social reform. For what good is it after all to spend all the time and labor over the mending of ruins, broken down by other ill-advised people? No! the bull must be seized by the horns; the source of evil must be stopped. Abolition for all humanity of the consumption of alcohol in any form and concentration was the clear and unequivocal aim of the struggle.

Experience shows that in all countries where the alcoholic habit reigns it accounts for from one-half to three-fourths of the crimes, a great share of suicides, of mental disorders, of deaths, of diseases generally, of poverty, of vulgar depravity, of sexual excesses and venereal diseases and of dissolution of families. The worst feature, however, is the effect of the poison on the sexual glands of the drunkard which promotes the production of deformed progeny. Professor Hodge of Worcester, Mass., found in the progeny of artificially alcoholized dogs almost the same physical and mental degenerations which we have just described in man.

"But," you will say, "alcohol is poisonous in excessive amounts only. A moderate quantity of beer or wine will not do any harm; it promotes pleasant sociability. We do not care to forego this pleasure just on account of a few drunkards."

This question—what dose is harmless and not poisonous—demanded serious tests. As an answer we have the numerous experiments of Kraepelin, Smith, Fürer, Aschaffenburg. They are not refuted, and have found manifold corroboration. Doses of even 7-10-15 gm. ($\frac{1}{4}$ - $\frac{1}{2}$ oz.) of alcohol, which correspond to a glass of wine or a pint of German beer (certainly a most moderate dose), are sufficient to paralyze, retard or disturb all the central and centripetal cerebral functions. The number of mistakes in calculation, setting type, memorizing, is increased. Sensibility is blunted, the reaction is retarded. The subjective consequence of the effect is agreeable; one feels heat, cold and pain less; one is less afraid, less accurate, less scrupulous. At the same time a very slight illusion spreads over reality, the first beginning of the later intoxication by higher doses. Hence, whenever alcohol promotes sociability and loosens the tongue, it is the consequence of a cerebral intoxication. Whenever the dose is too weak to produce this result, it also fails to have the desired effect. Hence, it is evident that the social effect of alcohol is pathological. It may, in Kraepelin's and Delbrück's words, rouse stupid crowds to talk. One needs only to study in Germany the "beer

jokes," beer conversation and the beer literature. They have stifled in young Germany the idealism, the taste for the classics and the finer mental pleasures to an extent that makes one cry for help. Among the academic youth of Germany, the drinking of beer has truly killed the ideals and the ethics and has produced an incredible vulgarity.

Every drinker, one must remember, was moderate once and did not want to become a drunkard. And how many die of alcoholism of the heart, or of the liver, or of the kidneys without knowing it? I might mention here many of my best friends and really great minds. "The moderate drinkers are the unconscious seducers of the people," says v. Bunge very justly. When I mentioned this lately to an American scholar, he answered: "Oh, in America it is quite different. Only common people drink down their throats; decent people drink only occasionally very moderately. We believe in educating to a judicious self-control rather than in making the laws of an extremist." To this I answered: "That the drinking habit came into disuse with you is due just to those total abstainers and prohibitionists whom you attack so. But if you succeed in destroying their work, you will before long, with your 'moderate drinking,' introduce again the European drink habit in America, and the entire campaign may begin anew after you have given progress a set-back of from fifty to one hundred years." He had no answer to this.

Moderate drinking is the nursery of inebriety. It leads to social alcoholism with mathematical certainty because we can not change the human brain. There is no means of removing the alcohol plague, except by the abolition of the drinking habit. I know not of one sensible reason that would justify the moderate use of alcoholic beverages (and of other narcotic drugs like cocaine, hashish, opium, morphine, ether,) and on the other hand, know of innumerable scientific and social reasons which condemn the indulgence very stringently.

We have begun in Europe a scientific, social and hygienic campaign against the use of alcohol which makes encouraging progress. The United Kingdom Alliance, and the Union of Opponents of Alcohol among the educated, as well as the Independent Order of Good Templars among the people, work under this standard. The same is done by numerous teachers, physicians, students and college clubs in Great Britain, the Scandinavian countries, Germany, Holland and Switzerland. In France, too, the day begins to dawn under the powerful influence of Dr. Legrain. Yet we are just in the beginning.

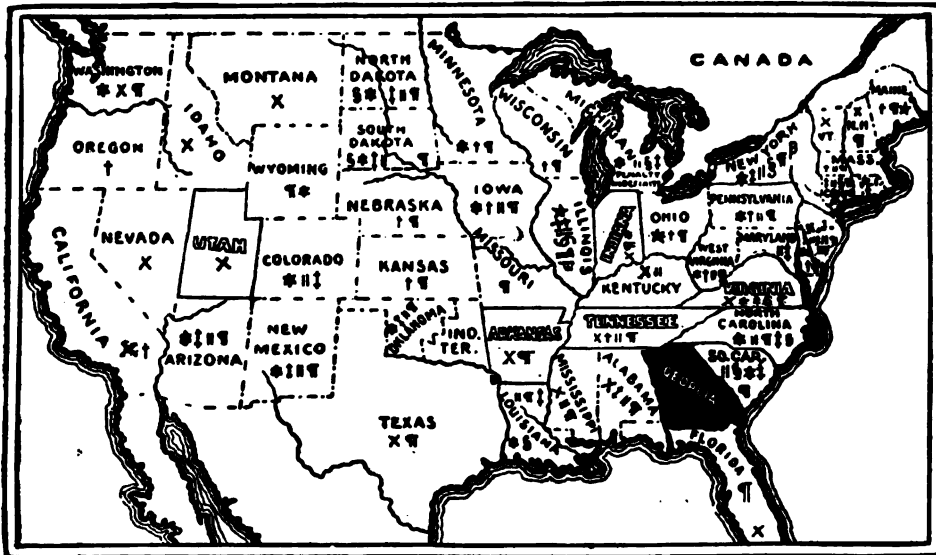
What then can I say of America?

The country where Dr. Benjamin Rush first proved, about the beginning of the century,

that alcoholism is not a vice, but a disease depending on intoxication, was also the pioneer of the reform. After powerful struggles it has wrought great reforms, and has largely brought into discredit the habit of drinking at table and in good society. The closing of the saloons on Sunday, local option, asylums for drinkers, temperance legislation, instruction on temperance in schools, prohibitory laws in several States, are so many great steps of progress of which America may well be proud and to which

question and of the social and individual effects of alcohol. The threadbare arguments of our European opponents were presented to me everywhere, and I might have thought I heard the echo of my old colleagues of long ago in Germany; of independent and unprejudiced study of the question but little was to be heard. A scientific alcoholic movement independent of religion and politics is almost completely absent. This is a serious defect. The blame rests on the sin of omission of those who have

TEMPERANCE EDUCATION MAP OF THE UNITED STATES AND TERRITORIES



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There are 16,000,000 children of school age in the United States under Temperance Education Laws.

the abstainers of Europe look with the greatest interest.

Nevertheless, the last few years have brought a certain relaxation, a certain malaise and cessation of effort, the causes of which I have tried to understand. I had for a long time felt that the men of official science, the teachers in American universities, are either indifferent or opposed to the movement. I made an effort to search for the reasons, and was astonished to find with most a *great ignorance of the alcohol*

a scientific education. On the other hand, there appeared very plainly the animosity against the kind of procedure of the religious women who direct the movement, and especially the fear of compromising one's scientific position by siding with such elements. The fear of compromising one's self is unscientific; it is a disgraceful human weakness. Science demands truth and does not ask where it comes from.

With gigantic steps and an unheard of spirit of enterprise, North America has formed a

power unequalled in the history of mankind in the course of this century. A magnificent future undoubtedly is in store for her. Yet the inner machinery of such a thing can not fail to have its hooks and friction. A powerful stream of immigrants annually pours into the United States, at once opposed to and in need of temperance. Notwithstanding the remarkable and rapid power of assimilation of the American people, every single immigrant who brings with him all the prejudices and customs of his home, can not be Americanized in a day, especially if he finds there a colony of countrymen. The Irish in particular bring a large army of obstinate and passionate drinkers to America.

In another respect the Germans are almost as bad. On account of their assiduity and efficiency, they are well thought of; they are excellent aids of civilization; but they usually represent the financial interests of the alcohol industry, especially the breweries, and they passionately take the side against abstinence. They even take drinking to be a kind of national distinction, as the faces of numerous

German-Americans give shining testimony. The American knows how to polish the immigrant rapidly and how to teach him better manners; he ought to make him sober, even if he should be an "educated" German.

Alcohol dealers and producers are the enemies of the hygiene and morals of the people, and the destroyers of our race, whether they realize it or not. Their interests deserve no regard. They can and shall make a living in another manner. But it is the duty of every good citizen to set a good example, to become an abstainer, and through instruction and practical help to divert all the population more and more from the use of alcohol, and from the disgraceful degenerating drink habit. As long as one drinks, even one glass a month, he feels the irresistible need of excusing and defending that glass, and unconsciously one becomes an

advocate of the alcohol habit. Public opinion must be educated in this sense, independent of politics and religion, in the rich and poor, the educated and uneducated, the Irish, the German and the Anglo-Saxon, the Catholic and Protestant.

I consider the anti-alcohol instruction in the schools indispensable, and its introduction in the United States means a great and powerful progress. With keen attention we follow in Europe the vacillations of the great alcohol reform in North America. *Noblesse oblige*. The Americans are the pioneers and leaders of the movement. To them is due the honor, but also the duty to be the first to bring this powerful social reform to a victory on which a great share of the future of our race and its civilization depends.

That new continent which is free from the prejudices of an Old World, which reveals the light springing from the confluence of races and ideas, and which has already produced so many great things, shall again in this field reap a lasting success.

The progress of social hygiene should ripen as a fruit of the victories of scientific insight.

AUGUST FOREL, M.D., Ph.D., LL.D.

Professor of Psychiatry in the University of Zürich.
From a brochure reprinted from the *American Journal of Insanity*, Vol. LVII., No. 3, 1900.

SUMMER SONG

Misfortunes may press like a serried band,
And life may be full of pain,
But when Summer takes us by the hand,
There are smiling lips again.

Life's leaves, like a rose, may have dropped apart,
Its hopes be under our feet,
But when Summer takes us by the heart,
With joy do the pulses beat.

Are we grudging the birthdays as they roll?
Dread we this narrowing shore?
Ah! when Summer takes us by the soul,
It is Life forevermore!

CHARLOTTE FISKE BATES.



"Our school-room lies on the meadow wide,
Where under the clover the sunbeams hide,
And the daisies twinkle like fallen stars."



THE OUTSIDE OF THE BODY

"To see to it I grow and gain and give."

THERE is a plant in the tropics which always faces the north. It can not be made to grow in any other direction, and travelers may direct their course by it as confidently as from a compass.

The earnest teacher is the same undeviating guide to her pupils. From month to month she studies their individual tendencies, and shapes instruction to their several needs, but always with one ideal in mind — the development of the child's threefold nature.

It is her constant care that every pupil grows and gains and gives; that his body rounds out into physical perfection as he gains in mental power, while the development of character which enables him to put his energies to good use keeps pace with both.

Now that review days have come, this underlying motive of the year should still be prominent. In primary classes the work in physiology deals mainly with the outside of the body. Call attention to the perfection to which this is carried in birds and animals; to their grace of movement, their beauty of form and coloring. Show why this is true; that it is because they live rightly; because their food is simple and fitted to their needs; because they breathe the fresh pure air; and because they exercise every limb, and go to bed early at night.

Help the little ones to think how far the same rules should apply to them, and point out how they as well as the birds can develop their possibilities. As warm weather approaches make freer use of story and poem to explain the truths you would bring out, and shorten all the lessons. Review questions on topics presented in the JOURNAL during the year, together with authoritative quotations relative to the effects of narcotics upon health and development, are given below. The questions will be found suggestive in summing up the primary work; the quotations are for the teachers use, and, if given to the children at all, should be restated in the simplest terms.

FIRST YEAR

What are some of the things which help us grow?

How do cigarettes hurt the growth?

Why do we need to stand and sit erect?

Why do children need to go to bed early?

What does food do for us?

Where do some of the different kinds of food we eat come from?

Name some of the grains which are good for food.

What are the best fruits to eat? Why should we take care to eat ripe fruit?

What foods help to make brain and muscle?

How should our food differ in summer and winter?

Why should beer not be used as a food?

Name the parts of the face.

What is the use of its different features?

Why should the face be kept clean?

How can we make our faces pleasant to look at?

AUTHORITATIVE QUOTATIONS

Alcohol retards, prevents, and is destructive in either large or small doses to normal growth and development; it lowers the working power. —PROFESSOR C. F. HODGE, Clark University.

Chemistry shows us that alcohol is not a tissue builder, containing none of the elements from which the tissues are made. Its use in health can not be of any value. It is true the grains from which it is made contain gluten and fibrin—elements of great importance in the development of the human system—but in the production of alcohol a chemic change is produced, so that there is nothing which the tissues of the body can appropriate to their use.

—V. D. MILLER, M.D.

For the animal and human organism, alcohol is not both a food and a poison, but a poison only, which, like all other poisons, is an irritant when taken in small doses, while in larger ones it produces paralysis and death.—MAX KASSOWITZ, M. D., Professor in the University of Vienna.

Alcohol is not a food. It is in great part oxidized in the body, but it can not take the place of any of our necessary foods.

—P. J. MÖBIUS, M. D., Leipsig.

Children who use tobacco have their growth interrupted, as nothing more definitely interferes with the equilibrium of the tissue-building, digestion, assimilation, elimination, and metabolism, than tobacco.—I. N. LOVE, M. D., before Miss. Valley Med. Ass'n.

Few things could be more pernicious to boys, growing youths, and persons of unformed constitution than the use of tobacco in any of its forms.—*Cope's Tobacco Plant.*

I know of no evil force so powerful, to-day, in sapping the bodily and mental strength of our boys, as the cigarette habit. Its results can be seen in the faces of those who use it, the moment one enters the classroom.—ROBERT MEADE, M. A., Inspector Public Schools, Brookville, Ont.

SECOND YEAR

How does wine differ from grape juice?

Why are wine and cider harmful drinks?

Why are home-made wines injurious?

Name the five senses. What do we learn through each?

How much could we know of what is going on about us if we had only the sense of hearing?

How can we help to make all our senses more acute?

Why should one always let tobacco alone if he wishes all his senses to remain keen and on the alert?

Describe the covering of the body.

What is the work of the skin?

How does the skin of birds differ from that of people? How is our skin unlike that of animals? that of a fish? an insect?

How should the skin be taken care of?

AUTHORITATIVE QUOTATIONS.

We may call the grape a noble gift of God. Wine certainly is not, for we never obtain this liquid from the grape except by using artificial means especially designed, by means of a process much resembling rotting, in co-operation with germs that have been added.—ADOLF FICK, M. D., Professor of Physiology, University of Würzburg.

The fermented liquors, especially wine and the strong varieties of beer, are in one respect more dangerous than the spirituous. Their influence is more gradual, more imperceptible, they are attractive because they seem to promote sociability, are lauded and sung by poets, and delude humanity the more because they insinuate themselves as indispensable friends.—AUGUST FOREL, M. D., LL.D., Professor of Mental Diseases, University of Zürich.

The poisonous element in all forms of intoxicating drinks, and the one so fraught with danger to the bodily tissues, is the alcohol they contain. The proportion of the alcoholic ingredient varies, being about 50% in brandy, whiskey, and rum, about 20% to 15% in wines, down to 5%, or less, in the various beers and

cider; but whether the proportion of alcohol be more or less, the same element of danger is always present.—A. F. BLAISDELL, M.D., Boston.

The rapidity of thought, the clearness of memory, the capacity to reason, the power to control the will, are all measurable by instruments, and are all lowered by alcohol. We can accurately measure the action of alcohol on the senses, and on these alcohol is a paralyzant at all times.—*Journal of Inebriety.*

Cigarette smoking is perniciously prevalent among lads from eight years old and upwards. The evil is growing. There can not be two opinions as to the destruction of health and morals that follows its use by minors.—JOSEPH SANDERS, Secretary and Inspector Children's Aid Society, London, Ont.

The effects of cigarette smoking on the young and undeveloped system are certainly most injurious, affecting not only the mucous membranes of the nose, throat and lungs, but having its most injurious effect on the nerve centers.—W. O. LAMBLY, M. D., Cookshire, Que.

THIRD YEAR

Name some of the ways in which a boy's body differs from that of a dog. What are some of the uses of the upper limbs? the lower limbs? the head? the trunk?

What can we do to make our bodies tall and straight and strong?

How do alcoholic drinks hurt the growth?

Why should we let beer alone if we want to be strong?

Give three reasons why we need food.

Why should we eat at regular times?

Name a grain which makes a good food; a food which is good for the bones; a healthful starchy food; the best kind of meat.

Why should food be well chewed before being swallowed?

How may the stomach be injured?

What happens to our food after it has been taken into the stomach?

Why does a boy's first cigarette make him ill?

What is the great danger in smoking the first cigarette, or in drinking the first glass of beer or cider?

AUTHORITATIVE QUOTATIONS

Alcohol excites man, but does not strengthen him. It is no substitute for food, but takes away the taste for it.—*London Lancet.*

From the standpoint of race hygiene we must oppose with the utmost energy the use of alcohol as a beverage for children. If during this most important period of their development, so



Ready for Fun.*

far as their future is concerned, our youth are prohibited from using alcoholic drinks they will grow up mentally and physically more energetic. — RICHARD DEMME, M.D., Professor in University at Berne.

Contrary to the popular opinion, heavy work is not made easier by alcohol. The laborer who earns his livelihood by the exertion of his muscles destroys the source of his strength most effectually by the use of alcohol. — PROFESSOR KRAEPELIN, Heidelberg University.

It is claimed that alcohol aids digestion. On the contrary, it coagulates albuminous matter and thus renders it more difficult of absorption. By its action the sugary materials become with difficulty soluble. It retards or embarrasses digestive fermentation. It provokes nausea, indigestion, and causes the gastric catarrh that troubles all drinkers. — DR. DE VAUCLEROY, Professor of Hygiene in the Belgium Military School.

Strong drink and tobacco are at the root of much of our country's disease, and not until such habits are given up can we ever expect to find a race of strong healthy men and women. — G. B. MCKENDRICK, M.D.

You will find that cigarette - smoking youths have impaired digestion, small and poor muscles, irritable tempers, and a lack of capacity for sustained effort of any kind, and I believe that you will find that they do not succeed in life. The men who win are men of strong physique. — T. H. MARABLE, M.D.

The cigarette is the bane of our youth, and has, to my knowledge, done immense evil by sapping the vitality of our boys, beclouding their

minds, and making them totally incapable of exercising their natural energy. — F. L. MITCHELL, M.A., Public School Inspector, Lanark County, Ont.

Even the smallest amount of smoking is hurtful, as it often produces nervous functional diseases of the stomach, debility and irregular action of the heart, impaired vision and irritation of the throat, sometimes called "smoker's sore throat." — THOMAS CHRISTIE, M. D., M. P.

That the cigarette is a deadly poison is susceptible of the most positive scientific proof. A few months ago I had all the nicotine removed from a cigarette, making a solution of it. I injected half the quantity into a frog, with the effect that the frog died almost instantly. The other half was administered to another frog with like effect. Both frogs were full grown and of average size. The conclusion is evident that a single cigarette contains poison enough to kill two frogs. A boy who smokes twenty cigarettes a day has inhaled

enough poison to kill forty frogs. Why does the poison not kill him? It does kill him. If not immediately, he will die sooner or later of weak heart, Bright's disease, or some other malady which scientific physicians everywhere now recognize as the natural results of chronic nicotine poisoning. — J. H. KELLOGG, M. D., Superintendent Battle Creek Sanitarium, Michigan.

The use of the cigarette by the young weakens the general vitality, and thus dwarfs the stature and lessens the storing of reserved strength. Such results are especially serious in the growing time of life. It seriously unfits for the strains which come upon body and mind in the

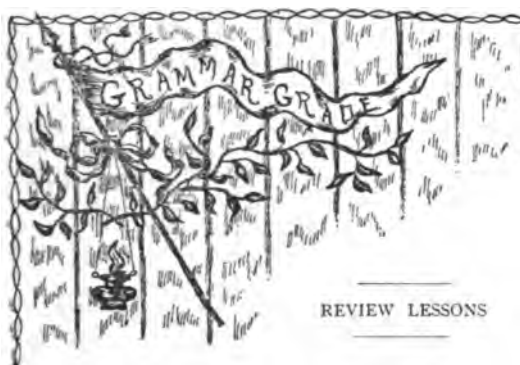
competition of business and the obligations of home. — A. C. COURTICE, D. D., Toronto, Ont.



" Father calls me William,
Sister calls me Will,
Mother calls me Willie,
Brother calls me Bill "†

* Courtesy of the *Inland Printer*.

† Courtesy of the *Educational Gazette*.



THE INSIDE OF THE BODY

ACCORDING to the legend of ancient Troy, the city could not be taken so long as a certain statue of Pallas Athena, the goddess of Wisdom, remained within its walls.

For ten years Troy was besieged from without and the attacking armies exhausted every device of war to no purpose. But hardly had their sacred Palladium been removed from within the city, by a clever strategy of the enemy, before the wisdom it personified went with it. The Trojans straightway voted to bring within their gates the mysterious wooden horse, little dreaming that by this act they were voluntarily admitting the enemy they had so long held at bay.

The story is not without its modern significance. The youth besieged by constant temptation to indulge in beer and cigarettes is safe from their attacks so long as he keeps in mind a knowledge of their harmful effects and refuses to allow these substances to enter the citadel of his body. They can not injure him from without. But the moment he is beguiled by their apparent harmlessness into a single indulgence, he has admitted into his system an enemy whose power he can not measure.

It is the teacher's duty as a law-abiding citizen to instruct her pupils in the treacherous nature of all alcoholic drinks and narcotics; it is her privilege as a lover of humanity to impart this instruction so skilfully that the child will be won by it to continued right living.

During the primary years all work in hygiene deals largely with the external parts of the body. But as the pupil passes up through the grades he learns that health and strength come from within as well as from without; that if the brain is dulled or the heart weakened by smoking cigarettes, no amount of external training will make good the loss.

Let this be the leading thought in summing up the year's work in intermediate classes—the care of the body within. Not merely the processes of digestion or respiration or circulation, but the larger idea that these are life processes, and that their health and vigor are to determine

the child's ability in whatever direction he maps out for himself. Questions and scientific quotations along this line, based upon the JOURNAL lessons given during the year for these grades, are subjoined.

FOURTH YEAR

How do the different shapes of the teeth fit them for their work?

What are the teeth made of? What kinds of food do they need to keep them in good condition?

How does tobacco spoil the looks of the teeth?

What organs of the body are overworked when alcohol has been taken?

How does alcohol injure the blood?

How is the work of the blood interfered with by the presence of alcohol?

What is the effect of alcohol upon the heart?

Why are drinking people more liable to disease than abstainers?

Why can one do more work if he does not touch alcohol in any form?

How does the use of tobacco impair muscular force?

Why is the cigarette smoker so often pale and listless?

What proof of the harmfulness of cigarettes is found in the refusal of business men to employ boys who use them?

What is the name of the poison in tobacco?

AUTHORITATIVE QUOTATIONS

Nobody can smoke or chew tobacco, or drink any kind of liquor without spoiling the teeth. There is no way in which tobacco can be used that does not make the teeth yellow. Besides it helps to ruin them. — VICTOR C. BELL, M.D., D.D.S.

The elimination of half an ounce of alcohol requires the expenditure of enough vital force to perform a day's work. The heart must beat faster, the lungs work harder, arterial tension is lowered, and all the organs flooded with blood which they do not need, but which stimulates them to unnecessary work. — *Medical Brief*.

Alcohol poisons the blood, weakens the brain, robs man of many of life's comforts and joys, and may at last destroy his soul. It is well that the children be taught these things.

— *Medical Temperance Review*.

When considerable quantities of beer and wine are taken frequently, it is not merely the alcohol in these beverages that is injurious, but also the temporary overfilling of the blood vessels, because that entire stream of fluids is

obliged to pass through the blood. All of that superfluity has to be equalized by means of increased action of the heart.—F. VON BIRCH-HIRSCHFELD, M. D., Professor of Pathology, Leipsig.

The liabilities to sickness are greater among drinking men than among abstainers, because alcohol weakens the vitality, lessens the power of resistance, and renders the body more susceptible to disease.—A. BAER, M.D., Royal Sanitary Commissioner of Berlin.

The disadvantageous effect of alcohol on persons performing muscular work is well known, and it has been proved from the records of military expeditions that the best physical results are obtained under total abstinence from alcohol. The evidence, therefore, is overwhelming that alcohol in small amounts has a most deleterious effect on voluntary muscular work.—VICTOR HORSLEY, M.D., F.R.S.

Tobacco in any form impairs muscular force, and produces heart failure. Nineteen per cent. of heart failures among men can be traced to nicotine poison. In each decade of years the number increases because the resisting power becomes less.—CHARLES H. ST. JOHN, PH. B., D.D.

After he has been smoking for some time, the blood of the smoker is found on examination to be thinner and paler. Bleeding from a cut surface is difficult to stop. The red blood corpuscles are very much changed. Their number and their oxygen-carrying power is diminished. They lose their power of clinging together and lie scattered about. Tobacco exhausts the vitality of the user.—W. H. RILEY, M.D., Supt. Colo. Sanitarium.

FIFTH AND SIXTH YEARS

What proof is there that alcohol is a narcotic rather than a stimulant?

In what ways is the water drinker better off than one who drinks beer or some other alcoholic liquor?

What advantage in muscular power do abstainers have over those who drink?

How does tobacco lessen the strength of the body?

Why does one feel warmer after alcohol has been taken into the body?

How is this feeling of warmth deceptive?

Why is the drinking man frequently unable to think coherently? Why does he often say and do foolish things?

How does the use of alcohol affect the memory?

Why does the use of tobacco so often cause color blindness?

What is the general effect of nicotine upon the sensory nerves?

Why do other bad habits usually go hand in hand with cigarette smoking?

AUTHORITATIVE QUOTATIONS

Alcohol, after a most careful physiological investigation, has been declared to be not a stimulant but an anesthetic, a depressing and paralyzing agent under all circumstances. It lowers the temperature and the pulse-rate, diminishes the senses, lessens the muscular strength, impairs the memory, slows all the brain functions, and brings them below their normal acuteness. It

diminishes the power of reason and judgment.—I. D. MISHOFF, M.D., Milwaukee.

The great advantage of the water-drinker, as compared with the alcoholic, under work, is this: He has the same strength, with greater self-control. He is ready to stop, when necessity requires that he should, and runs less risk, consequently, of injury by excessive strain. He does not expend a temporary energy at the expense of future exhaustion. He does not avail himself of a doubtful and deceitful help, at the cost of deterioration of the blood, and consequent danger to health and life. He does his work at least as copiously and as well as the other even for a time; and in long continu-



"Feet that creeping slow to school
Go storming out to playing."

ance of labor, he has the whip-hand of him quite. He obtains his desired ends in all respects satisfactorily. There is no lassitude, headache, feverishness, foul tongue, or aching limbs next day—even after the hardest labor. All is fresh, and supple, and free. Reaction is real; blemished by no fever; and not falling suddenly and treacherously away. "I have backed as many as sixty tons a day, with perfect ease," says a London coal-whipper, "since I took the pledge. But before, I could scarcely have been able to crawl home; certain to have lost the next day's work."—JAMES MILLER, M.D., F.R.S.E.

The influence of alcohol upon muscular work has been established experimentally; it has been demonstrated that man works better when he does not use this pretended stimulant. The physiological experiments of Destree have established that alcohol is a paralyzer of muscular work. It excites at first, but this excitation is altogether transient and is followed immediately by depression.—DR. DE VAUCLE-ROY, Professor of Hygiene in the Military School of Belgium.

Though tobacco is less destructive than alcohol, still, whether it is smoked or chewed, it has an extremely harmful effect upon men who are engaged in severe physical exertion, and not least so when the supply of food is not abundant. Tobacco lessens the strength of the body, and reduces nervous power, capacity for endurance and tenacity of purpose.—*The Medical Pioneer*.

There is no poison that has a greater destroying power upon the sensory nerves than nicotine. Tobacco in any form produces amaurosis, which is a loss or decay of sight without the visible defect in the eye; in brief, it destroys the optic nerve, producing color blindness.

—CHAS. H. ST. JOHN, Ph.B., D.D.

The use of cigarettes affects the nervous system, weakens the will power and destroys the ability of the boy to resist temptation, and because of this he easily falls a victim to those

habits which not only destroy the body, mind and soul, but irresistibly lead him into a violation of the laws of his state.—HON. GEO. TORRENCE, Gen. Supt. Ill. State Reformatory.

Experiments carried out by Dr. W. P. Lombard of the University of Michigan have shown that in from five to ten minutes after beginning to smoke an ordinary cigar muscular power began to diminish, and in an hour, when the cigar was burnt, it had fallen to about twenty-five per cent. of its initial value. The total work of the time of depression, compared with a similar period, was 24.2 to 44.8.—J. W. SEAVER, A.M., M.D.



Little Barefoot.

VACATION

I have closed my books, and
hidden my slate,
And thrown my satchel
across the gate.
My school is out for a
season of rest,
And now for the school-
room I love the best;

My schoolroom lies on the
meadow wide,
Where under the clover the
sunbeams hide,
Where the long vines cling
to the mossy bars,
And the daisies twinkle like
fallen stars;

Where clusters of butter-
cups gild the scene.
Like showers of gold-dust
thrown over the green,
And the winds' flying foot-
steps are traced, as they
pass,
By the dance of the sorrel
and dip of the grass.

My lessons are written in
clouds and trees,
And no one whispers, ex-
cept the breeze,
Who sometimes blows,
from a secret place,
A stray, sweet blossom
against my face.

My school bell rings in the rippling stream,
Which hides itself, like a school-boy's dream,
Under the shadow and out of sight,
But laughing still for its own delight.

My schoolmates there are the birds and bees,
And the saucy squirrel, more dull than these,
For he only learns, in all the weeks,
How many chestnuts will fill his cheeks.

My teacher is patient, and never yet
A lesson of hers did I once forget:
For wonderful lore do her lips impart,
And all her lessons are learned by heart.

O, come! O, come! or we shall be late,
And autumn will fasten the golden gate.

KATHERINE LEE BATES.

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"O zephyr, queen of the dreamy south,
Breathe on the bud of the hawthorne tree;
Kiss to blushes the tulip's mouth,
And the clover red for the bee.
Scatter the mist till it falls below
On the seed of the ripened pod,
And a million blooms shall spring and grow
In the summer fields of God!"

THE REPUBLIC'S APPEAL TO THE MEN IN ITS UNIVERSITIES

WHEN the history is written of the results to mankind which have followed the investigations and discoveries of the past twenty years, none will appear so far reaching and beneficent as those which have followed the search after the real nature and effects of alcohol and other narcotics, beginning with the work of Carpenter and Richardson and coming to the great scientists of the present. The undeniable results of those researches do not support the fallacies that have led to the drink habit. Among them are the facts that alcohol is a protoplasmic poison causing the breaking down of body tissues and the loss of nitrogen, shown by Miura, August Smith, Keller who worked under Bunge, Rosemann in the German universities and others. The fact that alcohol diminishes ability for mental and muscular work has been demonstrated by Fürer of Zürich, Destrée of Brussels, and Kraepelin and his pupils in Heidelberg.

This scientific research confirms the utterances of such men as Professor Kassowitz who says that alcohol is not both a food and a poison, but a poison only; and Professor Horsley of University College, London, who says that total abstinence has a scientific basis. The discoveries of these and kindred truths are destined to deliver mankind from the slavery of alcohol. Shall that deliverance be a speedy one, or must long periods of time elapse before the truth gets to the people while individuals and nations go out of life to swell the unnumbered hosts of victims of alcohol bondage? This question has vital interest for no nation more than ours. True, we have almost

universal public school scientific temperance instruction; we are teaching the findings of science to the children of this land, and are rejoicing in the results. But if we are to retain that teaching there is need here of the same impartial, honest, scientific investigation on the alcohol question that is going on in Europe.

The great scientist, August Forel, M.D., Professor of Psychiatry in Zürich, says of the situation in our country in an article on other pages of this magazine:

"We have begun in Europe a scientific, social and hygienic campaign against the use of alcohol, which makes encouraging progress. What can I say of America? After powerful struggles it has wrought great temperance reforms, among them, instruction on temperance in schools. These reforms are so many great steps of progress and conquests of which America may well be proud, and to which the abstainers of Europe look with the greatest interest. Nevertheless, the last few years have brought a certain relaxation, a certain malaise and a certain cessation of effort, the cause of which I have tried to understand.

"I found when in America that the men of official science, the teachers of American universities, are either indifferent or opposed to the movement. I therefore made an effort to search for the reasons, and was astonished to find with most a *great ignorance of the alcohol question and of the social and individual effects of alcohol*. The threadbare arguments of our European opponents were presented to me everywhere, and I might have thought I heard the echo of my old colleagues of long ago in Germany. Of independent and unprejudiced study of the question but little was to be heard.

"In the United States a scientific alcoholic movement independent of religion and politics is almost completely absent. This a serious defect. *The blame rests on the sin of omission of those who have a scientific education.*

"With gigantic steps and an unheard of brave spirit of enterprise, North America has formed a power unequalled in the history of mankind in the course of this century. A magnificent future undoubtedly is in store for her.

"I consider the anti-alcohol instruction in the schools indispensable, and its introduction in the United States means a great and powerful progress. With keen attention we follow in Europe the vacillations of the great alcohol reform in North America. *Noblesse oblige*. The Americans are the pioneers and leaders of the movement. To them is due the honor, but also the duty, to be the first to bring that powerful social reform to a victory on which a great share of the future of our race and its civilization depends."

These criticisms of Professor Forel do not apply to-day to the physicians of America as a

whole, judging by their publications. Repeated and exhaustive articles exposing the fallacies of Professor Atwater's claim for a food value for alcohol, published in the leading medical journals of the country, have shown study, knowledge and a keen interest in the scientific and social aspects of the alcohol question on the part of their many writers.

Unfortunately, we have no evidence of a like knowledge or interest, but the opposite, on the part of non-medical university men. We wish we could point to evidence that denies Professor Forel's charge that "In America the men of official science, the teachers of the universities, are either indifferent or opposed to the temperance movement;" that they show "a great ignorance of the social and individual effects of alcohol;" that "In the United States a scientific anti-alcoholic movement in the universities is almost completely absent;" and that "the blame for this rests on the sin of omission of those who have a scientific education."

We wish this could be truthfully denied, we believe it can be in some colleges Professor Forel did not visit, but we must admit that in many cases it is all too true. We who are leading the world in so many other things are sadly behind in this. It is what European rather than American science has revealed that, put into our indorsed books, is being taught in our public schools to-day, and we have to agree with Dr. Forel that much of it is beyond the knowledge of many of our university men who nevertheless think they know all there is to be known on the subject. The man who knows officially about many things for which he has a just reputation, but who has "great ignorance" about another important subject which he thinks he knows all about is a source of great danger on that subject.

We have always said that whether he be a worker on a farm, or in the shop, or a trainer of brains in the university, the American is the knightliest of men, that his chivalry for woman is the most chivalrous in the world, that his manly helpfulness can always be depended upon. What a shock to this confidence in our brothers is this assurance of Dr. Forel, that he found in this country among university men no "independent, unprejudiced study" of the alcohol question, but an evident "animosity against the kind of procedure of the religious women who direct the movement, and especially the fear of compromising one's scientific position by siding with such elements."

Dr. Forel does not tell us whether he discovered what the procedure on our part is to which objection is made. We are consequently left in doubt as to whether or not it is because we are "religious." After praying a great deal, asking God to show us what to do to stop this great evil, and to help us in so do-

ing, we have gone to the legislatures and asked that physiological temperance be made a compulsory public school study for all the future men and women of this country; then have imported the works of science on alcohol from Europe; have had them translated; have urged authors and publishers to put their teachings into good text-books; have secured their use, and have paid no attention to the false accusation that our motives are mercenary; have with a single eye kept steadily on caring first, most, and all the time only to save the child, yea, all the children. This has been our procedure. We are sorry it is not approved, but we make no apology for it. Does the scientific temperance instruction movement lack the favor of university men because we, its authors, are women, and it did not start in the universities with men? That would be too un-American to be thinkable. The men of this country believe in woman and welcome her work for morals and education. Gladly would we have left the initiation and advocacy of this work to the strong men in our halls of learning; but they left it undone, and the peril was great and might reach any mother's child in the land. While we were waiting, the time to educate succeeding generations of children was passing never to return. We could not delay, and we respectfully remind this class of America's instructors of Dr. Forel's words, "Science demands truth and does not ask where it comes from. The fear of compromising one's self is unscientific; it is a disgraceful human weakness."

The American university man, although he may for a time be prejudiced because misinformed, is after all fair and open to reason. Study of the question will yet make him the friend of the temperance cause, and for that study we plead. The people believe in a university teacher. "He has been to college," they say, "and more, he teaches in a college, and of course knows" all about everything.

Such a man is doing a great wrong when he says as one did recently in a light, careless way, "Oh, those temperance text-books that are studied in the public schools are not accurate," and then was obliged to admit that he had never examined one book of the kind he criticised in such a nonchalant manner, and that his opinion was based on hearsay. A professor in a certain college tried to impress his point before a legislative committee by criticising, as if it was what is now indorsed, an old edition of a text-book on this subject written seventeen years ago and long since revised to be abreast with the progress science has made in that time. The same professor, later in a public address, objected to the introduction of "harrowing pathological details" into primary classes, as though this study required such. This very

criticism showed that this professor either had never examined the lessons in hygiene prepared for primary pupils, or that he was not candid; we must believe the former.

This class of men who, as Dr. Forel has shown, do not know but who think they know, and who thrust their uninformed opinions upon the public backed by their official position, are, we repeat, a grave peril to the cause of total abstinence in our country to-day.

Why should not the people expect that our institutions of advanced learning should study the alcohol question with all the impartial, unprejudiced thoroughness that is devoted to that investigation in some of the universities of Europe? These institutions have been endowed

courage, to pioneer a new and unwelcome truth. Cowards are not born of the ozone of our lofty hills and broad prairies, and the recruits from our universities and colleges will not, we believe, be wanting to lend the zeal of young life and knowledge for the overthrow of America's most dangerous slavery, that of her sons to alcohol, which Professor Forel aptly calls "the poison of nations."

MARY H. HUNT.

Sir Evelyn Wood says, in a recent report on the Aldershot manoeuvres, that there was less smoking in the ranks on the line of march than in the previous year, with the resulting advantage that fewer men fell out.—*London Lancet*.



"O joy to be out in June, to be out alert and free!
For life is a precious boon with the world in harmony."

by the people; to them they send their children to receive the highest educational advantages our country affords. Why should they not expect that the professors from our colleges who attempt to speak for public school education on this subject should do so from knowledge and not from prejudice based on hearsay?

The total abstinence movement, which in Europe began in the universities, started in this country with the people, but that is no barrier. This is the people's country and the scholar is not set apart by his education; he is only one of the people who has given more time to study that he may the better serve his country and his countrymen. His country calls now for this study, and for the defense of his knowledge against the alcohol slavery that has destroyed so many of its citizens. No true American ever turns a deaf ear to a summons from the republic, whether it is a call to face the cannon's mouth or for what takes more real

HER ROYAL LITTLENESS

Just a tiny morsel,
Delicately sweet
From her golden halo
To her little feet.

She is fair and dainty,
Eyes of bluest blue,
Hands of pinkest wax-work,
(Nothing much to do.)

Ears too small for hearing,
Mouth a sweet, wild rose,
Cheeks that steal our kisses,
Very saucy nose.

* * *

She's such a little woman!
Perhaps it's better so,
She creeps into the coldest heart,
And keeps it warm, you know.

MYRA HUMMEL BUDD

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OUR TEETH: HOW TO PRESERVE THEM, by Victor C. Bell, M.D., D.D.S., Young America Publishing Company, New York.

Beginning with the baby's first tooth, this little book sketches the history of the teeth to adult life and gives excellent hints as to their care. The need of perfect cleanliness is well brought out, and the chapters on food and eating are full of information. The book is a skilful adaptation for primary pupils of "Popular Essays on the care of the Teeth and Mouth," and has been prepared under the author's personal supervision by a successful teacher. It is to be hoped that this experiment may be followed by other books of the same character dealing more fully with the subject for the information of advanced grades of pupils.

MARTHA'S VINEYARD SUMMER INSTITUTE, under the presidency of William A. Mowry, Ph.D., begins its twenty-fourth annual session on the ninth of July. Thirty-nine courses are open with an unusually able corps of instructors. Teachers who wish to combine rest and pleasure with professional quickening will find Cottage City an ideal resort.

THE WORK OF CIVIC IMPROVEMENT in pamphlet form calls attention to an enterprise which in recent years has attained a high degree of importance. It aims to bring out the possibilities for beauty and healthfulness which exist in every locality, and especially to interest young people in caring for their home and school grounds. Beauty costs no more than ugliness does and is far preferable. When people generally grasp this truth all our back yards and alleys will be as charming as those portrayed in this pamphlet.

THE PRATT INSTITUTE MONTHLY for April gives a thoughtful discussion of the functions of the secondary school. Its great mission is to discover the special aptitude of the pupil and fit him to use his talents for the well being of the community as well as for his own development. To this end his constructive ability must be trained and at the same time health and character must be given careful consideration.

The fallacious feelings of ease, warmth and comfort, which cause the unwise, excessive eater to think that alcohol has aided the digestion of the mass within, are mainly deceptive feelings due to the benumbing influence of the anesthetic poison in deadening the uneasiness and pain of indigestion.

—NORMAN KERR, M.D., F.L.S.

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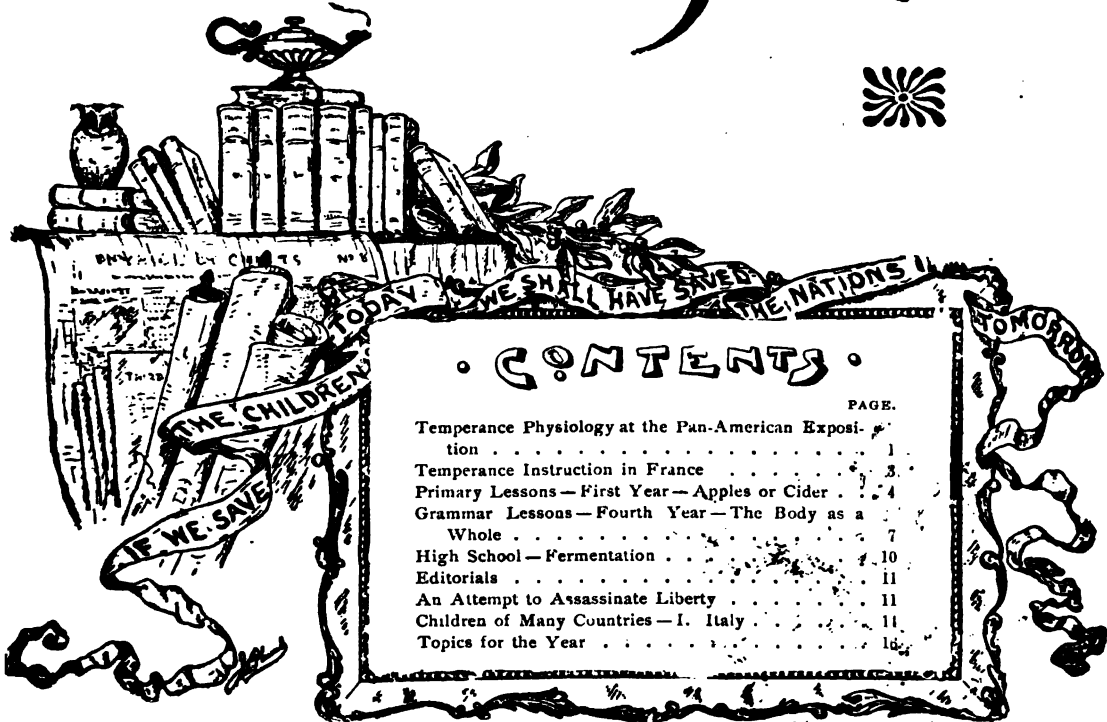
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Vol. XI

BOSTON, SEPTEMBER, 1901

No. 1

GOLDEN DAYS

Sunshine falling down in showers,
Golden skies and golden flowers—
Asters in the garden bowers—
That's September.

Gold dust on the mignonette,
Golden pansies blooming yet,
Goldenrod with dewdrops wet—
That's September.

Golden fields of grain and corn,
Golden dusk and golden morn,
Golden stars at twilight born—
That's September.

Golden apples hanging high,
Golden bees a-buzzing by,
Thirty golden days that fly—
That's September.

—A. E. A.

TEMPERANCE PHYSIOLOGY AT THE PAN-AMERICAN EXPOSITION

A STUDY of the curriculum of the free public schools which are educating the children of a country will enable the thoughtful student to arrive at a fairly just estimate of the standards of that people and of the future character and consequent future history of that nation.

Any forecast of the history of this nation would fail in a just estimate of the outcome of an important factor if it should leave out of its calculations the results seen to follow what has been justly termed "The American Educational Method for the Prevention of Intemperance;" in other words, the fact that sixteen million children of school age in this country are under temperance education laws. The enforcement of these laws is the solemn duty of the sponsors of this legislation, the Woman's Christian Temperance Union, as well as that of every other good citizen. To this end it is of importance to the future of our country that its people and especially its teachers and school boards should realize that, except in Georgia, temperance physiology is not an optional matter, but is a study engrafted by law on the public school system. It is a more mandatory branch even than the three "R's," because the laws demanding it are more specific, with, in many cases, penalties for failure in compliance with the same. Therefore, it is self-evident that in any exhibit of the public school studies of the United States temperance physiology should have an equal place and in

the same connection with that assigned to other branches. Hence the wisdom of having an exhibit of temperance physiology side by side with displays of other public school studies at the Pan-American Exposition has led to the installing of such an exhibit which will be found in the Educational Department in the Building of Liberal Arts. The space it occupies is not one twentieth of that which this exhibit filled to repletion in the Columbian Exposition at Chicago, in 1893, but all educational exhibits are cut down. Indeed, the entire space given to education for the whole United States in the Pan-American Exposition is less than that given in Chicago to the schools of two states, New York and Pennsylvania.

Over the wall space of this exhibit of Scientific Temperance is a gilt eagle with wings spread under silken flags of the United States. The feet of the eagle rest upon an inscription in gold letters on black which reads:

ONE FACTOR IN THE TRADE SUPREMACY OF THE
UNITED STATES — SCIENTIFIC TEMPERANCE
INSTRUCTION IN ITS PUBLIC SCHOOLS

By way of explanation of the above inscription we would remind the reader that for sixteen years our public schools have been teaching all pupils that alcohol hurts both brain and muscle and therefore injures working ability. In harmony with this instruction total abstinence is now largely demanded by employers, and thereby the output of labor is increased which increases profits and helps to give our country its present leadership in the commerce of the world.

Under the above exhibit are pictures of the National and International Scientific Temperance Instruction headquarters at 23 Trull Street, Boston, Massachusetts, with interior views of the study, the scientific temperance museum, and other rooms.

There is wall space for but two of the pens with which scientific temperance instruction laws have been signed, the pen used by President Cleveland in signing the national law, and that used by the Governor of Nova Scotia in signing the first compulsory temperance education law enacted by a parliament of the British Empire. In the door of the cabinet is a map of the United States with only one state — Georgia — in black, because it alone has no temperance education law. Within, on the leaves of the cabinet, is the story of the progress and results of this study in our public schools, with samples of its literature. Underneath

the cabinet on the table is a goodly array of the indorsed temperance physiology textbooks for all grades of schools, published by nearly every school book publishing house in this land. If incorporating the total abstinence teachings of modern science into this large collection of school physiologies had been the only work accomplished for this cause during the last sixteen years in this country, that alone would be enough to make one's heart glad and thankful, but add to this the fact that the laws of almost the entire land require the study by coming generations of the truths these books teach and we get some idea of the forces at work wherever the temperance people are pushing enforcement, forces which are destined to make this an enlightened nation of total abstainers.

The Pan-American Exposition is a practical exhibit of the industrial situation of our country at the close of the decade.

Evidences of the growth in wealth of our republic are everywhere manifest and are emphasized by comparison to one who has studied the American exhibits in the Columbian Exposition in Chicago, in 1893, and that of the Centennial in Philadelphia, in 1876.

Commissioner Carroll D. Wright, in the August number of "*The World's Work*" says:

"Four or five years ago pessimists told us that this country had reached its highest point and that henceforth we might look not for great growth but for a period of stagnation." He then goes on to show from advanced sheets of the twelfth census that a conservative estimate of the net gain in the wealth of this nation, during the ten years closing in 1900, was over twenty-five billions of dollars with a continued upward tendency, a record before unknown to any nation in the world. This vast gain is not all in the hands of our great Napoleons of industry. That fact is shown by an increase of savings deposits unprecedented in any other period.

In 1900, there were over \$766,000,000 more money deposited in the savings banks of this country than there were ten years before. Actual investigation has demonstrated that about one-half of these deposits belongs to the wage-earning class, showing that so much of the gain in wealth of this country is in the hands of the many, the people.

A writer in "*The World's Work*" says concerning the Pan-American: "There was never such a sight under heaven as the people themselves. They gaze at the crowds, never finding a monotonous hour. And they seriously study new inventions, new processes, strange products. Given a splendid spectacle, with an instructive background, and given a cheap railroad fare, and such intelligent, wholesome millions of people flock from our great populous

areas as were never seen before, nor in any other land. And they are themselves the crowning glory of the spectacle."

"Never before has there been an exposition where the supply of electricity was practically unlimited," because there is but one Niagara Falls, and it is one of the gains of the last decade that man has learned to harness this before untamable force to do his bidding. Go where you will, on every side in the Pan-American you see and feel the marvelous energy of the roaring Niagara, and you realize, as the agency of electricity in producing what you see is pointed out, that as brute force in the muscles of man and the horse fifty years ago gave place to the energy of steam, so steam as a force in transportation and production is now being retired by the subtle, awful energy, not yet fully tamed, of electricity.

At the time of the Centennial Exposition, twenty-five years ago, Great Britain stood first in commercial rank among the nations, Germany second, France third, and the United States fourth. With amazing suddenness we have leaped from industrial obscurity in foreign trade to the foremost place.

Nevertheless, one misses at the Pan-American the beautiful silks, velvets, brocades and tapestries that France sent to the Centennial and Columbian Expositions, the exquisite designs and effects in china and other works of art from Germany and Austria, the wood-carving from Switzerland, and other like productions of beauty. But this is Pan-America. Productions of the western hemisphere alone can be shown here, and the absence of beautiful things from the older countries of Europe reminds us that we have not as yet produced them.

"When the productions of the world were placed on exhibition at the Centennial Exposition in Philadelphia, in 1876, the producing countries learned a great lesson. Bismarck asked the German representative at Philadelphia how the products of Germany ranked relative to those of other countries. 'They are cheap and wretched,' he replied. Germany had not then taken kindly to the French method of technical training by which France was surpassing other nations in artistic productions, but the revelations at Philadelphia taught her a lesson and she immediately began the work of training men who should be competent to design artistic goods that would meet a market."

Somebody has said that given a Yankee and a waterfall all else will follow. Let us hope that the conspicuous absence of beautiful, artistic productions in the Buffalo exhibition will so incite our people that our great wealth will yet manifest itself in articles of beauty as well as in those of utility.

"Expositions are the timekeepers of progress," said President McKinley this morning

in his Buffalo speech. As one who is ever on the outlook for the swing of the pendulum that ticks out the story of human progress, I made it a point on the warmest, most thirst-provoking days in Buffalo, and oftenest at the lunch hour, to enter the great restaurants and other buildings where beer is the prominent beverage offered for sale.

I wanted to contrast the popularity of beer at the Pan-American with its use in the Columbian Exposition eight years ago. The beer customers were comparatively few, while the patrons of water, orangeade, soda, tea, coffee, and other like non-alcoholic drinks were a vast multitude. The contrast, as far as I saw it, shows plainly that the habit of beer-drinking is not gaining with the people of the United States. Here, faithful, painstaking teachers of temperance physiology in our public schools, I saw the fruit of your work. In imagination I was with you in the schoolrooms of the country. I saw your pupils bending over their physiology lessons; I heard their recitations. Keep right on, teachers. Each successive generation among the builders of the future in our republic must be taught the same truths, and coming ages will thank God for you and your work.

The illumination of darkness was never illustrated as at the Pan-American Exposition. Light, its beauty and power, has here a new setting. As night begins to wrap its mantle of darkness about the noble buildings, fountains, plazas, courts, colonnades and countless architectural effects, the great fountain in front of the Electricity Building, pouring its water from under the medallion that represents the two Americas, begins to take on a yellow hue that grows brighter and brighter until it seems like liquid glory, and all the many fountains in every direction take on the same hue. Then the Electric Tower itself slowly breaks into a blaze of light, ineffable, beautiful, but not too bright to dazzle the eyes, and every building, every lamp post, everything there which a moment before was veiled in darkness is out-

lined and illumined in light. The great crowds are hushed and wrapped in silent wonder and delight at the spectacle. I heard some one near say under his breath, as though he feared the sound of his own voice might dispel the scene of beauty, "We shall never see the like of this again, wife, until we get inside the Celestial City." But I remembered the divine declaration, "God is light," and the whole glorious picture seemed symbolic of the future of his truth which is destined to dispel the moral darkness that blights our times, and to make this old world more and more like the Celestial City.

Meantime, as we thank God for our goodly heritage we need as never before to offer Kipling's prayer:

"If, drunk with sight of power, we loose
Wild tongues that have not thee in awe,
Such boastings as the Gentiles use,
Or lesser breeds without the law—
Lord God of Hosts, be with us yet,
Lest we forget—lest we forget!"

MARY H. HUNT.

TEMPERANCE INSTRUCTION IN FRANCE

The French minister of public instruction has recently addressed to the rectors of all classes of schools throughout the country a circular in which he urges them to renew with all possible energy their efforts to spread the anti-alcoholic faith. "I wish," he says,

"that it should take an official place on our programs on the same footing as grammar or arithmetic. Short lessons and lectures well supported by facts and figures should be organized in addition to the regular work in all our public educational establishments." Examinations in temperance are to be in primary and secondary schools. The misinformed persons who are constantly telling us that the free use of liquors is conducive to temperance "should read, mark, learn and inwardly digest" the words of the French minister.

From the lowest depth there is a path to the loftiest height.—CARLYLE.



The Electric Tower at the Pan-American Exposition



APPLES OR CIDER

"THERE is nothing in all the world so important as children," said a father who had traveled in many lands and among many peoples.

"There is nothing so interesting. If you ever wish to be of any real use in the world, do something for children. If you ever yearn to be truly wise, study children. We can dress the sore, bandage the wounded, imprison the criminal, heal the sick, and bury the dead; but there is always a chance that we can save a child. If the great army of philanthropists ever exterminate sin and pestilence, ever work out our race's salvation, it will be because a little child has led them."

We are face to face these September days with a multitude of little ones just entering school life. Except in so far as home influences may have been pernicious they come to us unsullied, but this time of innocence does not last long. If we would save by formation rather than by reformation we must act speedily.

No more subtle temptation comes to the child than that of cider-drinking. The glowing fruit appeals to every sense and he does not understand why he may eat the one and not drink the other. It lies with us to make the distinction so plain to him that he will never err through ignorance, and then to help him gain that self-control which is the best safeguard against evil.

(1)

WHERE APPLES COME FROM

The best time for lessons on the apple is during the opening weeks of autumn when the season is at its height and there is plenty of material.

Find whether all the children know where apples come from. Perhaps some will think they come from the grocery or fruit stand. So they do, but before that they lived in a home of their own. Would you like to see an apple's home?

Take the class into an apple orchard for this fruit lesson wherever practicable. If that is

out of the question, bring a dish of fine apples into class, and draw on the board in colored chalk an apple tree loaded with fruit.

It takes the apple tree a long time to get these beautiful apples ready for us. Months ago it hung little pink and white cradles up in the branches for the baby apples to swing in, and put out soft green leaves all about them. Do you remember how they looked? (Show pictures of apple blossoms or draw them on the board.)

The apples were only tiny, hard balls at first, and each one was fastened in its cradle so tightly that it could not fall out. Every day the mother tree brought food for her babies from the earth and air, and the rain and sunshine helped also to make them grow. At last they were big and ripe as you see them now.

(2)

WHAT THE APPLE LOOKS LIKE

How can we tell the different kinds of apples apart? When they first began to grow they were all of the same color (green). What are the colors of these ripe apples? How many different colors can you find? Point out to the children the variations in color and markings of apples growing on the same tree.

Call attention to the shape of the apples. How is it different from that of a ball? When the children have found the two hollows in an apple, show how the stem in the upper hollow held the apple fast to the tree. Show the remains of the blossom, or apple cradle, in the other hollow.

Let each discovery be made by the children themselves as far as possible. Even if they do not see so much as you can tell them they will remember far more. Modeling the apple in clay will be a good test of what they have really seen and remembered. Give each child moist clay and tell him to make an apple from this as nearly like the real fruit as he can.

When we have something very precious to take care of we keep it in a very safe place. The apple does the same thing with its treasures. Would you like to know where it keeps them?

Divide an apple half-way between the stem and blossom ends, holding it so that every child can see the star-shaped core. How many points has it? These are the little rooms where the apple keeps its treasures. See how smooth and shining they are, and what a cozy nest they make for the brown seeds tucked away inside! How many of the little seeds room together? Find how many there are in all the rooms.

(3)

WHAT APPLES ARE FOR

We all know one good use for apples, what is it? Everybody likes them to eat. How good

they are when they are ripe and juicy, but no one should eat them when they are green. Sometimes we make them into apple pies or apple sauce. Who has eaten them cooked in other ways? Tell about it.

Mother Nature meant to have us enjoy apples or she would not have taken so much pains to make them taste good. But she has another use for them. They are to hold the seeds.

The apple tree lives a great many years, but at last it grows old and dies. Then there would be no more apples unless there was a new tree planted to take its place. Where do all the new trees come from?

I thought you could guess. From the little seeds in the apple. We will plant some here in the schoolroom where we can watch them grow into baby trees. How do you suppose they got inside the apple? They grew there in the very center where they would be safe from harm. Mother Nature takes good care of her apple babies, just as our mothers do of the babies at home. Just see how many coverings she wraps around them! Point to each. Tell something about it.

When the children have found the smooth skin, the fleshy part of the apple, and the tough walls of the seed cells, explain why each is needed. The skin keeps the apple from being injured by sun or rain, and from rotting. The pulp is good for food, while the core is hard and tough to keep people from eating the seeds.

If the seeds tasted as good as the pulp does, people would eat them and there would be none to plant. But we throw them away and so help to plant new trees wherever we are.

Tell how apples are sent to many countries, so that other people can enjoy this good fruit with us and by and by have apple trees of their own.

Now we have found two uses for apples, let us say them over together:

Ripe apples are good for boys and girls to eat.

The apples hold the seeds and take care of them until they are ripe and ready to grow.

Find a wormy apple and show the children the home some little creature has made in it. One day last spring a mother moth thought this apple cradle would make a nice nest for her little egg, so she wrapped it up in these brown blankets at the bottom of the apple and went off and left it.

After awhile her egg hatched into a tiny caterpillar that liked the apple as much as you do and ate her way right through it. Then perhaps she spun a cocoon for herself and went to sleep for the winter. When she wakes up next spring she will have wings, and another moth will be flying about hunting for apples on which to lay her eggs.

But she will have to be pretty careful not to let the farmer see her, for he does not want his nice apples spoiled in that way.

(4)

HOW CIDER IS MADE

There was once a fine apple orchard. The trees stood up straight and tall and every one was loaded with fruit. The warm sun shone down and painted the apples in the brightest colors it could think of, and they grew riper and sweeter every day.

Three children lived in the house in front of the orchard. Very often they came to play under the trees with their dolls, or picked the daisies and buttercups growing in the grass.

But the best fun of all was when the apples were gathered and sorted, each kind by itself in a great rosy pile for the market. The children always helped

to pick them up, then afterward they had a ride back to the barn in the big wagon.

"The apples look as if they knew they were going to make people happy and do some good in the world," said mamma who had come out to watch the fun. "You can almost see these big fellows chuckling to themselves. They don't look much like Mr. Jackson's gnarly apples on the other side of the fence."

"What is Mr. Jackson going to do with his apples?" asked Ruth. "I shouldn't think anybody would want to eat them."

"They are not good to eat," said mamma, "so I am afraid he means to make cider of them."



"'Come, right about face,' September says,
'And return to school with me.'"

"He will not pick them carefully and sort them as he would if they were going to market. Cider apples are all dumped in together, even those that are wormy or that have begun to decay.

"When they get to the cider mill they will be shoveled out of the wagon into the cider presses, and squeezed and mashed until all the juice runs out into bad-smelling tanks called vats.

"At first this juice looks and tastes just like that in the apple, but in a few hours it begins to grow darker colored and to lose some of its sweet taste. This is because a part of the sugar in the juice has been changed into two new things.

"One of these passes off in bubbles, the other stays in the juice. It is alcohol, a bad poison.

"When this change takes place the apple juice is called cider. It is no longer good to eat as it was when it was in the apple. The alcohol has poisoned it."

"Isn't sweet cider good?" asked Ella. "Mr. Jackson gave me some once, and I thought it was fine."

"So did I," said Ruth and May in chorus; "I like it better than lemonade."

"I used to like it too," said mamma, "but I never drink it. I don't think you will want to when I tell you

(5)

WHY CIDER IS HARMFUL

even when it is sweet. It is because one can hardly drink it at all without wanting more. The more he drinks the more he wants until it is almost impossible for him to let it alone.

"He soon gets tired of sweet cider and likes it better when it is several weeks old. After a while, perhaps, very hard cider is not strong enough for him, so he begins to take other liquors. Perhaps now he wants to stop drinking, but more than likely he finds that the appetite for it has grown too powerful for him to resist."

"Mr. Jackson says cider has never hurt him and he has drunk it all his life," said Ruth; "so it can't be bad for everybody."

"When I was crossing the street the other day, I heard some one shout, 'Mad dog!' said mamma. 'Everybody stopped what he was doing and ran at once to the nearest place of shelter till a policeman could get to the spot and put the poor dog out of his pain.

"Instead of getting out of danger at once, suppose these people had said to themselves, 'I think I'll stay right here. It isn't at all likely that the dog will bite us all, and perhaps I shall be one of the lucky ones.' Don't you think they would have been very foolish?

"Cider has done a great deal more harm in

the world than any mad dog. It may not make every one a drunkard who takes it, but there is always danger in its use and nobody can be sure beforehand that it will not hurt him. The only safe plan is never to taste it at all."

"Mr. Jackson said he would send his apples to market, and not make them into cider any more if he had such nice trees as we have," said Ella.

Mamma thought a minute.

"Perhaps papa will let him have some grafts from our orchard," she said. "You can ask him. But what are you going to say if Mr. Jackson offers you sweet cider again?"

"I shall tell him I would rather get my apple juice out of a big pippin apple," said Ruth. "Then I know it won't hurt me."

"So do I," said the others. "Let's get a little now." And off they ran to the pippin tree.

AUTHORITATIVE QUOTATIONS

HEALTHFULNESS OF THE APPLE

No variety of fruit raised on our soil exceeds the apple in healthfulness. The fruit contains an exceedingly grateful acid (malic) aiding digestion, cooling the circulation, and influencing the nerve-centers. Cooking breaks down the cells of the pulp, diffusing the acid and sugar more uniformly through the mass, and rendering the whole more easy of digestion. — *Journal of Chemistry*.

DANGER IN CIDER-DRINKING

Many people are under the impression that cider is a harmless beverage, but it is not. It contains alcohol like all fermented liquors, and from taking this in small amounts the formation of a permanent craving and an alcohol habit has often been developed. — HENRY F. HEWES, M.D., Harvard University.

In the report of Burghill Asylum (England) the medical superintendent states that more people were in the asylum through cider-drinking than through any other cause. — *British Medical Journal*.

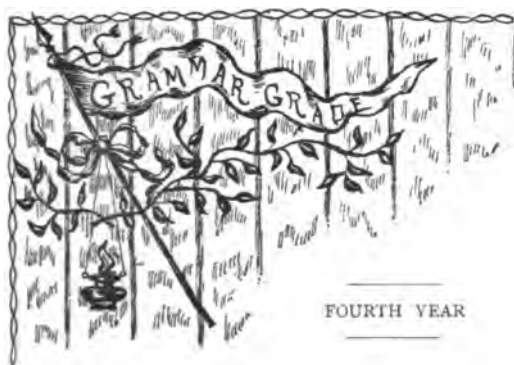
ALCOHOL IN CIDER

In cider, alcohol is present in amounts varying from three to six per cent. — M. JOFFROY, in *Revue Scientifique*.

All beers, ales, porters, ciders, and wines (home-made or not) contain alcohol in varying quantity, but the character of the alcohol is in every case the same. — H. NEWELL MARTIN, M.D., F.R.S., late Professor of Biology, Johns Hopkins University.

ALCOHOL SPECIALLY INJURIOUS TO CHILDREN

Alcohol has a greater effect on young, growing cell-protoplasm than on old cells and formed tissue; it is, therefore, specially injurious to children. — J. J. RIDGE, M.D.



THE BODY AS A WHOLE

"THIS is the eleventh time you have brought forward that same statement," said a judge to a lawyer who was arguing an important case.

"Yes, your honor, but there are twelve men in the jury box," was the reply.

The physiology teacher has few absolutely new facts to set before her pupils. Every year brings successive classes, and each must learn the same story of right living and be taught to form habits which will insure sound manhood and womanhood.

This does not mean monotonous work. For thousands of years Nature has given us the same unending round of seasons, spring growing out of winter and summer deepening into fall, yet with never a trace of tediousness in the process. So it must be in our teaching. The facts so familiar to us are unexplored territory to each incoming class and full of delightful mystery. If we will but look at the human body through the fresh young eyes of childhood, as well as through our own wise spectacles, the commonest facts will be glorified and each day's lessons will be an inspiration to better things.

Every boy and girl can be held spellbound by the mechanical marvels which are everywhere doing away with hand work. But although one has only to press a button or turn a lever to accomplish more stupendous undertakings than Aladdin ever dreamed of, no machine has yet been made which can compare with the human body. It stands alone as the one piece of mechanism which builds itself, repairs itself, and regulates its own movements.

The most thrilling tale from the Arabian Nights is not so fascinating as that which tells how this marvellous machine is made up, how its thousands of parts work together in perfect harmony, how it is controlled, and above all how it can be brought to the highest state of efficiency. No physiology lesson which deals with such a subject has the slightest excuse for being dull, though it be repeated to a thousand classes.

Suppose we begin the year's work for fourth grade pupils by studying the body as a whole. The first lesson should help them to find

HOW THE BODY IS MADE UP

If any of the class have visited the Pan-American Exposition ask them to tell what they saw in the Machinery and Transportation Buildings, and then to describe any modern machine which they know about. If no one can do this offhand have them look up the subject until they can, keeping the following points in mind:

Is it made in few or many parts? Why?

Are all the different parts made of the same kind of material? Why?

Is it a success; *i.e.*, does it do the work it is made for better than any other machine can do it?

Think of the human body and apply the same questions to it. Of what parts is it made up? Are they alike or different? Why is each needed? Name animals whose bodies have the same number of parts as a person's. Find how a monkey's body differs from that of a boy. Name some of the things a boy can do which no animal can. In what ways are animals superior to people?

We find that the body is made up of parts which are very unlike, how is it about the material of which it is made? Suppose we could see the inside of our arms or of any part of our bodies as plainly as we can the outside, what would we find? The class will know by feeling of their arms that there is a hard part within and also a soft part, both unlike the skin which covers the outside. They have seen bones, blood, and muscle. Let them experiment further, getting all they can from text-books and other sources of information as well, until they know what joints, cords and tendons are, and how and why they differ.

Bring a piece of beef or other meat from the butcher's shop into class, and let each pupil examine it for himself to see what other kinds of material he can find. Do we find the same in the human body?

Show the internal organs of a fowl, the lungs, heart, crop, gizzard, kidneys, and intestines, after first washing them carefully to remove all traces of blood and other objectionable matter. Have the class find and show by blackboard diagram the relative position of each of these organs. How do they differ in size, appearance, material, and location from similar organs in the body?

WHAT THE BODY HAS TO DO

Most machines are made to do only one kind of work, is this true of the body? In the

first place, it has to be able to stand upright. How can it do this? If we build a house the framework is the first part which goes up. What is the framework of the body?

1 Show a skeleton if one is to be had, otherwise use pictures and blackboard drawings. Have the class point to bones which are alike. Why are they not all of the same shape and size? Compare with the beams, studs, and rafters of a house, and show in each case how the size or shape of a part is determined by the use to which it is put.

Find a part of the skeleton which resembles a box, another which is like a cage. What does each contain? Point out various bones and let the class decide what each is for.

Why are there more bones in the fingers than in the arm? Give a reason for the many small bones of the spine. Compare the human skeleton with that of a dog. Notice the differences in the skeletons of a grayhound and a pig. How do these differences affect their habits? Why is it a good thing for the turtle to have his skeleton on the outside of his body? Why would it be a hindrance to us? Find and classify the joints in the body.

Besides standing upright the body has to move about from place to place, and its parts must also be moveable. How is this freedom of motion secured? Put on the board drawings of the upper arm muscles, and explain how they are fastened at each end. Show by a piece of elastic how muscle can grow shorter or longer and thus move itself and whatever it is fastened to.

A piece of boiled beef will show the tiny fibers of which muscle is made. Find the little tissue case which surrounds each fiber.

Have the class point out from a good sized chart, and then on their own bodies, the largest muscles. What different shaped muscles can be found? Why are they not all alike? Notice the muscles of the wrist and ankle. Where are cords and tendons needed instead of muscles?

A locomotive can not run a train without coal and water. We need food for much the same reason, to give us strength for everything we have to do, and to keep our bodies in repair. What are the parts of the body which hold the food we eat and get it ready to do this work? Point them out on the chart. Notice how they are placed in relation to one another. Why would not some other order do just as well? Find how each of the digestive organs is adapted to its part of this work. Why is the gullet a tube, for instance, and the stomach a bag? Why are the intestines arranged in coils and folds? Why is the outside of the intestines smooth and the inside rough?

The body needs air as well as food and there must be special organs to admit it and let it out again. Tell what parts of the body have this

work to do and how they do it. Ask somebody to breathe through a tube into lime water to show what happens to the air while passing through the body. How does this show the need of good ventilation in our houses?

Ask the class to think how the body protects its more delicate parts from harm by means of its outer covering, the skin. Compare the skin in man with that of different animals, birds, and fish. Does each have the same work to do? How is each adapted to its work.

There is much waste matter in the body which must be constantly got rid of. How is this work done? Point out the different organs which have it in charge, the lungs, skin, kidneys, and bowels, and explain the importance of each in helping to keep the body healthy and in good condition.

HOW THE BODY IS CONTROLLED

People have been trying for hundreds of years to make a machine which would run itself, but the human body is the only one that can do this successfully. How does it manage? What makes our eyes shut when any danger threatens them? What tells our feet to move?

Perhaps it was the nervous system which first led people to think of telegraphs. At any rate they are something alike, only no country is so well equipped with telegraph lines as the body is with nerves. Try pricking the body gently with a pin and see how many places you can find without one.

Show the central office from a chart, and the more important stations (ganglia). Find some of the largest nerves in the body and what they connect. Do they all carry the same messages?

Think again of all the many kinds of work the body does every day, walking, running, making the food we eat into blood, purifying the blood, and sending it all over the body. Show that every one of these movements is controlled by the brain and nervous system.

AUTHORITATIVE QUOTATIONS

ALCOHOL DOES NOT FEED THE BODY

Alcohol is not a food, is not an innocent beverage for the human race, is not conducive to the health and well being of normal man; but on the contrary, it belongs among the drugs, and the active poisonous drugs at that. —R. T. TRIMBLE, M.D.

ALCOHOL TEARS DOWN THE BODY

Indeed, before the manifestation of clearly marked symptoms, the so-called small doses of alcohol, subtly insinuating themselves little by little, too slowly and invisibly for immediate observation, attack organ after organ, system after system, causing the most extensive, but up to a certain time undiscoverable degeneration

of the tissues of all parts of the organism. In time the functions of all the organs are more and more vitiated, and the vital energy of the organism is found to be disordered throughout.—R. K. KOPPE, M.D.

ALCOHOL DOES NOT HELP PEOPLE TO DO MORE WORK

Contrary to the popular opinion, heavy work is not made easier by alcohol. When alcohol is added to the fatigue products of the muscles the depressing effect is very marked. The laborer who earns his livelihood by the exertion of his muscles destroys the source of his strength most effectually by the use of alcohol.—*Münchene Medicinische Wochenschrift*.

In a six day bicycle race at New York there were thirty-three entries. Twelve men stayed in the race,—all who used alcohol dropped out. The one who had never touched it won the race, as he did the previous year; the second used none; the third drank sparingly, had one-half teaspoon brandy in training; the fourth takes a drink occasionally when he feels like it,—in training had a little beer. Here is an inverse ratio between drink and victory. The latest English - American boat race gave similar results.—G. D. HAGGARD, M.D., in the *Medical Dial*.

ALCOHOL RETARDS DIGESTION

It is claimed that alcohol aids digestion. On the contrary it coagulates albuminous matter, and thus renders it more difficult of absorption. By its action the sugary materials become with difficulty soluble. It retards or embarrasses digestive fermentation. It provokes nausea, indigestion, and causes the gastric catarrh that troubles all drinkers.—DR. DE VAUCLEROY, Professor of Hygiene in the Belgium Military School.

The effect of alcohol is to weaken, or at any rate to retard, the process of digestion. A day in bed is a far more sure alleviator of dyspepsia than any amount of alcohol, and a few days of such treatment, followed by a course of regular

dieting, rest and fresh air, will put any patient in a fair way of recovery where alcoholic treatment has utterly failed to produce any good results.—G. SIMS WOODHEAD, M.D., London.

ALCOHOL IS A BRAIN POISON

Science has established that alcohol destroys first and most those parts which are most delicate and most recently developed. These are those wonderfully delicate brain cells upon whose proper formation the difference between men and beasts chiefly depends.

Whoever gives wine and beer to a child injures these delicate structures in their formation, and thoughtlessness, flightiness, passion, coarse sensuality and all base characteristics attain domination.—FRANZ SCHÖNENBERGER, M.D.

ALCOHOL LESSENS POWER OF RESISTING DISEASE

The white blood corpuscles are not, like the red corpuscles, confined within the veins, but can wander throughout the system to any point where they are needed as "germ-killers." The fact that alcohol injures these little soldiers, who are always on guard for our defence, shows why and how alcohol lowers the power of resisting disease.—W. S. HALL, M.D., Ph.D., Professor of Physiology, Northwestern University Medical School.

THE SO-CALLED VIRTUES OF ALCOHOL ONLY AN EXCUSE

All this talk about the nutritive value, the strengthening and curative properties of alcohol, is nothing but a cloak the drinker employs for concealing his appetite. If people did

not wish to drink, nobody would concern himself about the trifling nutriment claimed for alcohol.—P. J. MÖBIUS, M.D., Leipsic.

QUALITY OF ALCOHOL NOT AFFECTED BY ITS QUANTITY

Alcohol in small doses does not differ in quality from alcohol in large doses. One drop of it has the same characteristics as a thousand drops. The large quantity produces a more powerful effect than the small quantity, but in kind the effect is the same.—J. W. GROSVENOR, M.D.



When Grandma went to school.



FERMENTATION

NO one can understand why alcoholic drinks have the power to harm and destroy the body until he knows something of the nature of alcohol, and how it is formed. This he gets from the study of fermentation, a subject included in all modern physiologies. For high school pupils we suggest one or more lessons on the following topics:

- Purpose of the ferment (to keep the earth inhabitable).
- Nature of fermentation (a process of decomposition).
- The yeast plant, its
 - Method of reproduction.
 - Growth.
 - Size.
 - Products (alcohol an excrement).
- Fermentation of fruit juices (a chemical change which degrades).
- Nature of alcohol (always a poison, quality not affected by quantity).

AUTHORITATIVE QUOTATIONS

THE PURPOSE OF THE FERMENT IN NATURE.

There seems to be on the one hand a gradual building up of dead matter, first into vegetable and then into animal living organisms, and on the other, by means of the process of decay, putrefaction due to the growth of minute plants, a breaking down of the bodies of animals into their chemical constituents.

In both cases plants seem to be the middle stage in the transformation both from dead matter to the living animal, and in the reverse process. But for the latter, indeed, the surface of the globe would long since have been thickly covered over with the innumerable dead bodies of the various species of animals and would have been rendered entirely uninhabitable.—D. McDONNELL, M.D., in the *Medical Pioneer*.

NATURE OF FERMENTATION

Fermentation is merely one form of decomposition, but unlike many other forms it does not disengage offensive gases.—*Dietetic and Hygienic Gazette*.

THE YEAST PLANT

It will be worth while to rehearse the most important facts known with regard to the class of fungi to which the common yeast forms belong. These fungi reproduce themselves, not by division into halves, as do the common bacteria, but by the process of budding; the cells, when undergoing this process, appearing under the lens much like common cacti.

Each bud provides itself with a membrane when separating from the parent cell, and thus becomes complete in itself. The parent cell does not die in this process but gives rise to other buds, the entire process consuming about two hours in those forms where the life history can be easily watched.

The new cells thus produced are often bound together in clusters or irregular chains. Each cell has its proper membrane, which is filled with protoplasm, and contains a nucleus. It will average eight to ten millimeters in size.—*Journal American Medical Association*.

ALCOHOL AN EXCREMENT OF THE YEAST PLANT

Yeast, like every living organism, shows phenomena of two kinds, first those of nutrition and assimilation which are subordinate to the presence of its nutritious principles (sugar, nitrogenous compounds, mineral salts). Side by side with these phenomena of nutrition other inverse reactions, those of disassimilation, take place by which the tissues are changed into excrementitious products, unsuited to the life of the cell, and these are eliminated. Carbon dioxide and alcohol are the consequences of this process and belong to disassimilating reactions.—*London Lancet*.

FERMENTATION CHANGES THE NATURE OF FRUIT JUICES

Between the sweet juice of the grape which does not intoxicate and the intoxicating wine which the drinker loves, a foreign element has entered—fermentation; that is, the life of a little fungus—yeast—which feeds upon the juice of the grape and rejects the wine. That which we drink as wine has no more to do with grape-juice than the arrow-root (starch) of the plant, for instance, has with the carbonic acid of the air on which it lives. The one as well as the other is a product of a chemical change which is brought about by the life process of an organism, though in quite the opposite sense, for the plant cell glorifies that which it consumes, in that it forms from dead substances, carbon dioxide and water, a great source of power (sugar), while the yeast cell does exactly the opposite, consuming sugar and robbing it of most of its power, and casting out as waste substances carbon dioxide and alcohol.—J. GAULE, M.D., Professor of Physiology in University of Zürich.

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Why fret thee, soul,
For things beyond thy small control?
But do thy part and thou shalt see
Heaven will have charge of these and thee.
Sow thou the seed, and wait in peace
The Lord's increase.

KATE PUTNAM OSGOOD.

THE awful tragedy of the recent attempt upon the life of President McKinley leads us to conclude that the abstract from the Boston address on the editorial page will be timely, and that it justifies crowding out the September salutation to the teacher.

In the October JOURNAL we hope to present to our readers some glimpse of the great loss Scientific Temperance Instruction has met in the going to the better land of one of the most honored members of the Advisory Board of this Department, the great thinker, scholar, writer and orator, Joseph Cook.

AN ATTEMPT TO ASSASSINATE LIBERTY

THE would-be assassin's shots aimed at our President last Friday afternoon in the Pan-American Exposition at Buffalo have reached and hurt nearly every heart in this nation of seventy-five millions of people. While those shots wounded, with the intent to kill our honored and beloved chief magistrate, they were, in reality, aimed at every one of this sovereign people who believes in and would defend our popular government. The bullets that entered the body of the man whom we have clothed with power as the chief executive of this great nation were a wild, fanatical, murderous attempt toward substituting anarchy for what we hold dearer than life itself, our cherished institutions of popular government and the social order that includes our religion and our homes.

Of one thing in this dark hour we may be thankful. The ideas which that dastardly act represents are not American products. They are instead an importation of an unreasoning

form of opposition to all government, aroused by old world tyrannies.

Opposition to the unlimited monarchy of Russia, where the people for centuries were serfs, and are now a peasantry so stolid as scarcely to be able to realize their limitations, has given the world Nihilism. Advocates of Nihilistic theories in England, Germany, Austria, Italy, and other continental countries are called Anarchists. Through the wide open doors, swung on golden hinges, which invite all peoples of all lands to come to our hospitable shores, some of these anarchists have come to us. They seem unable to understand that their theories are uncalled for in this land of liberty. But their ideas of liberty are very different from ours. Here is a statement of their belief as given by an authority in the *New Century Dictionary*:

An anarchist is "One who seeks to overturn by violence all constituted forms and institutions of society and government, all law and order, and all rights of property with no purpose of establishing any other system of order in the place of that destroyed."

Imagine if you can the conditions that would exist where such ideas should be carried out! Their theory is that "the individual is supreme," that "government in any form is an excrescence on nature." They would "abrogate all laws touching the marriage relation," and thus would destroy that unit in society, the home. Those feeders, mainstays of the social order that we call civilization, our institutions of religion, and our schools these anarchists would demolish. Our courts of justice, trial by jury, our laws enacted by the people, and our regularly constituted legislative bodies for enacting these laws, above all the executive departments of our government that are enforcing the enactments which hold society together, and all property rights they would destroy by violence, and for the chaos that would follow they offer nothing. They are destructionists only. They seem to have no idea of construction or of its necessity. In trying to kill all rulers they are aiming to destroy everything that prevents a man from being a law unto himself alone concerning his neighbor's property and everything else. Their arguments are dynamite, bombs, daggers and bullets; their rendezvous the saloons.

A long black catalogue of murders attempted and committed on czars, kings, queens, emperors, empresses and presidents in many lands witness to the horrid purposes of this class of misguided seekers after freedom to do what they individually choose.

Truly did Madam Roland exclaim, kneeling before the clay statue of liberty erected near the guillotine with which she was beheaded in the French Revolution, "O, Liberty, liberty, what crimes are committed in thy name!"

Note for a moment the contrast between the anarchist idea of liberty and ours.

The preamble to our Declaration of Independence says:

"All men are born with an equal right to life, liberty and the pursuit of happiness."

The legal definition of this liberty which is our heritage is this:

"Liberty is freedom from all restraint except such as the rights of others prescribe."

I believe in definitions. They help to clear thinking, but I would amend this otherwise good one to make it include the obligation of the creature to his Creator. I would make it read:

"Liberty is freedom from all restraint except such as duty to God and the rights of others prescribe."

You or I have no liberty to ignore the command of our Maker, "My son, my daughter, give me thine heart," any more than we have to take from our neighbors what is their rightful due. I am sure you will accept this amendment, for this is a Christian nation. We acknowledge God as our chief lawgiver. It would be of interest to note, if time permitted, how this government of the people in the details of its legislative and executive departments fits and harmonizes with our definition of liberty. Every individual as far as the government is concerned is allowed to decide for himself as to his duties to his Maker. And every man and woman in all our broad land are free from all restraint that is not imposed by the rights of others, but these they must not invade.

Strange that anarchists should wish to overthrow such freedom, and stranger still that they should think they could do it by murdering our beloved President! To destroy the reigning family and its successors in an unlimited personal monarchy like Russia would be to destroy that government, and would bring temporary chaos in affairs. Something like that might follow if the royal successors were all killed in a limited monarchy like England, but in the United States not a royal family but the people are the source of power. If the anarchists were able to kill our President and Vice-President and every one eligible in such an emergency to that office, if they could kill every member of Congress and of our state legislatures in both House and Senate, and all in any executive office, this government of the people would still stand, for their places would quickly be filled. We are used to power reverting back to its source. That is a part of our system. Not until they had accomplished the impossible, namely, had killed the seventy-five millions of people could the source of power for the perpetuity of this government be destroyed by the violence of anarchists. They may fill the nation's heart with sorrow by taking pre-

cious lives as they have attempted to do in this case. This we must prevent. But let us be wise as well as just, and realize that our danger is not so much from violence as from disintegration of the capacity of any portion of our people for self-government. What shall we do to prevent such an emergency? Many of these anarchists are sincere, but their theories and conclusions are wrong. We must take care that the virus of this wrong thinking does not spread.

We have had much teaching of patriotism in our public schools and elsewhere. Now we need to teach with great thoroughness what real liberty is and what it is not. Let us have such a strict surveillance of every man who would land on our shores as will show whether he is an anarchist. Let it include every woman too, for the wrong teaching of a woman, a Russian high priestess of anarchy, has been one incitement to this foul deed against our President. All individuals tainted in the least with anarchy should be sent back to the lands from which they come. All unnaturalized persons now here who hold such ideas should be deported. Let us have a law that will define treason and describe its penalty, and then let us enforce it. If there is no law now that would punish the would-be assassin of our President beyond ten years' imprisonment, then let us have one that will. Let us have special legislation for such a criminal. All foreign born who have become citizens should be led to know that this country will not tolerate the presence of anarchy.

Yes, this is a land of free speech and of a free press, but not of freedom for those who would destroy the institutions born of the liberty for which our fathers died. This beloved country of ours has been baptized in blood. Have you asked as I have with a bleeding heart, why must every step for liberty be gained at such a cost? History answers only by pointing to the long line of martyrs who blazed the way for our liberties as they reddened the soil of this land with their life blood. Our fathers, the pioneers, often returned from their labors of the day to find wife and children dead, scalped by the hawk-eyed, wolf-hearted Indian, and the home in ashes. Why did they not go back to Europe? There was nowhere for them to go. To return to England would have been to meet again the persecutions they had fled from. Catholic Spain was not to be thought of; France with soldiers, shotguns and swords was terrorizing whole townships of people in a single day into making the sign of the cross to prevent being shot. To have gone to Germany would have meant immediate conscription to fight Frederick the Great's battles. Going to Italy was facing the power they characterized as the "Mother of harlots."

Frontier life in America meant dangers, but also liberty and boundless hope for the future. Return to the old world meant danger without liberty or hope for the future, and so our fathers stayed and "we have entered into the fruits of their labors."

Lexington, Bunker Hill, Dorchester Heights, Bennington, Valley Forge, Saratoga, Trenton and Yorktown all tell of seven years of bloodshed, carnage and suffering that gave national independence to the white race in this republic. Then in due time a President was given us, Abraham Lincoln, with a soul so true that over and above the roar of drums, and the din of battle he could hear the divine command, "Let my colored people go." It is an illustration not of the vengeance but of the rewards of history that the arm of a herculean son of Ethiopia who was liberated from slavery when he was four

years old, by the Emancipation Proclamation, should last Friday have hurled the assassin away from his murderous intent to send still another bullet into the body of our President. There is never gathered in all our land an audience the size of this, without some being present who

were a part of that awful sacrifice for liberty that we call our Civil War.

And the Spanish War, can I trust myself to speak of it? You know its priceless cost to me. We are perhaps too near it to understand its real import. When the dews of death were on the brow of my noble son who gave his life for that cause, he said, "The Spanish War was for the extension of the principles of liberty for which our nation stands. For that cause every true American should be ready to sacrifice, if need be, life itself."

Our liberties have been bought at a great cost. I have no fear that we shall surrender them to the violence of the anarchist, but that we may, when the horror of this deed is past, become careless about the inculcation of error

as to what constitutes real liberty there may be danger. Let us be true to our duty here and shut up the saloons as well. It is in them that anarchy is brewed and the drink sold that makes the mental degenerate, the unbalanced mind which furnishes a fertile soil for the unreasoning errors of anarchy—Czolgosz is a product of the saloon.

For the restoration to health of the clean, pure man, the Christian patriot, the wise and experienced statesman whom we have clothed with the power of a great sovereign people, who was shot because he represents our ideas of freedom, all praying souls the world around will continue to pray till God, if it be his will, shall give him back to us again.

MARY H. HUNT,

From an Address made by request to the Pilgrim Congregational Church, Boston, Mass., Sept. 8, 1901.



"The springs run low, and on the brooks, in idle golden freighting,
Bright leaves sink noiseless in the hush of woods, for winter waiting."

THE Russian Government Commission on Alcoholism recommends that spirits no longer be served as a ration to soldiers, in peace or war, nor be given by the officers; and that there be eliminated from the secondary school books the teaching that spirits

are good in moderation. Of fifty-eight school children of the superior class, it was found that ten had already been drinking spirits and five had been drunk; while among twenty-seven of the lower class nineteen had already drunk spirits and seventeen had already been drunk.

There shall never be one lost good; what was
shall live as before;

The evil is null, is nought, is silence implying
sound;

What was good shall be good, with, for evil, so
much good more;

On the earth the broken arcs; in the heaven
a perfect round.

—BROWNING.

CHILDREN OF MANY COUNTRIES

I. ITALY.

TO OUR AMERICAN COUSINS:

Do we need to introduce ourselves? Let us tell you where we live and you will quickly guess who we are. We live in a boot-shaped peninsula which you will find on your maps of Europe. Now you know us. Yes, we are Italians. Perhaps some of our brothers and sisters who have gone to America are in your schools. But I am going to tell you about those of us who stay in beautiful, sunny Italy.

Shut your eyes and try to picture our land. Here are dark forests of oak and chestnut, fields gay with flowers; there are vineyards, olive orchards, rows of lemon, citron, rose and oleander trees, and over all a wonderful blue sky. In our cities and towns are grand churches, some of them built hundreds of years ago, and beautiful paintings and fine marble sculpture.

Do you wonder that we are happy in this land and nearly always want to come back to it when sometimes we have gone away to other countries to earn more money?

The people in Italy are very fond of children. They call us *bambinos*. Indeed, sometimes it is said we are spoiled because we are allowed to do so much as we please. But whether that is true or not, there is always great rejoicing when a little baby comes into one of our homes. He is christened when he is very small, usually before he is two days old, and this is a great occasion. The godparents make him gifts, and his parents give a feast to their friends. Even the brigands in the mountains who live a wild life, and rob and steal and sometimes kill other people, see to it that their babies are christened. A priest was once seized by the brigands and carried off to their stronghold among the mountains. Here he was given a fine supper and a very comfortable bed for the night, although I suspect he did not sleep very well, wondering what the brigands would do to him the next day. In the morning, after breakfast, the chief brigand said to him: "Christen my *bambino*. Christen him 'Giuseppe.' Receive him into the Holy Church, or I will have you hanged." Of course the priest obeyed as quickly as he could, and when the ceremony was over he was given a purse of gold and taken back unharmed to the spot where he had been captured the day before. And for many years on the anniversary of the day a gift was quietly left at his door.

While we are little babies we are done up very snugly, almost like mummies, in several yards of bandage which is sometimes white or sometimes red and white or blue and white. Then we are often placed on a large pillow stuffed with wool and made on purpose for us.

This is fastened around us with three strings, a little cap is placed on our heads and we are ready to be taken for an airing.

When we are older we like to wear bright colors, and the girls and women often have a gay colored handkerchief upon their heads.

"As soon as the Italian baby begins to show strength in his limbs, he is put in the '*Cercle*,' a sort of hen-coop, large at the bottom, and narrow enough at the top to hold baby in it; it is made of wicker and weaved very open; outside there is a small rail large enough to hold playthings for him.

"When baby gets tired he makes himself small and sometimes he almost disappears under the *Cercle*; then he is taken up and put to bed or to crawl on the floor.

"But when he gets stronger he not only pushes the *Cercle*, but you may see him in the streets taking hold of it and running; to see him reminds one of a rooster when he gets ready to fight; and sometimes the babies will fight, particularly when there are several of them in one street, for each wants some other baby's toys. At first they put out their tiny hands, and beg for the other fellow's playthings; then as the baby sees that this is in vain, he raises his *Cercle* and starts for his enemy who, seeing him coming, grabs hold of his own *Cercle* and off he goes toward his own mother. Sometimes three or four babies get together; then as they tip toward each other, it is really fun to watch them."

When *Bambino* is still quite small, perhaps even before he learns to walk, he begins to eat black bread and garlic with a bit of strong cheese. As he grows older he eats a kind of bread which we call *polenta*. Our mothers make it by stirring yellow meal and a little salt into a pan of boiling water until quite a thick mush is formed. Then the mush is spread out in a shallow pan or on a slab to cool. Soon it becomes quite hard and the father or mother draws a string through it, cutting it into as many pieces as there are people to eat it. Do you think it rather dry? Perhaps it would not agree with us if we had not been taught to eat slowly.

Besides *polenta* we have many other things to eat. Some of you quite likely have eaten the macaroni of which we are so fond. We have vegetables and fruits, especially melons if we live near Naples. In Lent we have buns made of the kernels of the pine-cone mixed with oil and sugar. At Christmas we eat *torone* and *pan giallo*. *Torone* is a hard candy made of honey and almonds and covered with sugar. *Pan giallo* is made of plums, citron, almonds, sugar, pine-seeds and pistachio all mixed up together into a hard mass.

Our chestnut trees give us quantities of great brown nuts from which chestnut flour is made.

If we eat too much of this flour our mothers give us a tea made from acorns and we are very soon well.

You may guess that we have fun picking up acorns and chestnuts, although the chestnut burrs prick us just as I imagine they do you in your country, and if one slips on these burrs he remembers it for a good while.

Do the children in your country like games? We do. We have a number in which balls are used. Best of all we like *pallone*, a kind of hand-ball, and *bocce* which is played with one small ball and any number of large ones, the game being to plant the big balls close to the small one.

We have games too in which we count out to see who will be "it." Would you like to hear one of our counting-out rhymes? Here is one:

"Stana, balana,
Che batte la lana.
Stin balin,
Che batte lolin.
Salta fuori pellegrin."

The gayest time of all the year is the Carnival just before Lent. Everybody is out wearing masks and strangely dressed so that the streets seem full of clowns and dwarfs and giants and beings with donkey heads and bear heads and heads of dogs and wolves. We boys and girls may be as mischievous as we please, and the men and women are children with us. We throw flowers and candy and paper cut to bits upon each other, and even flour and eggs, or sprinkle water on the heads of the passers-by. Every one is merry and no one gets cross.

But life is not all fun even in Italy. Many of us go to school. The law of our country says that all children must go from the time they are six years old until they are twelve. But many of the fathers and mothers are not careful about sending their children all those years and so some of us go to school very little. When we do go, we learn to read and write, in Italian of course, and study geography and the history of our country. Some of the rich children go to school a long while and learn a great

many things. It is said that when we have a chance we learn very quickly.

Our young King when he was a boy did not escape school so easily as do many of his people. He had a very strict governor who never allowed the Prince to slight the smallest duty or study. Besides his regular lessons he had to study English and French, had riding, military exercises, fencing, music and painting. He even had to write out accounts of what he saw on his holidays.

His governor never used to overlook any carelessness and often scolded the Prince even before other people. One day the Prince did something that specially displeased his governor who said, "If I were the King, I would cut off your head." The Prince, who usually took his reproofs without answering back, this time could not restrain himself and replied, "When I am King I will cut off yours."

But the Prince is now our King, a strong well-educated man who knows better how to govern his people because he was taught when a boy to govern himself and never to neglect his duties.

Besides the schools in which we read and write, there are others where the boys learn trades and the girls how to embroider, sew, iron, mend, and other useful things. In this way they learn something to do by which they can support themselves.

So very very many of our people are poor that their children do not go to school at all,

or very little, but must begin early to earn money to help their fathers and mothers. Many of them used to do this by begging, crying constantly in our language to the passers-by, "Give me something!" but this is forbidden now. Wee children, almost babies, help in the work in the field, and when the summer work is done children of all ages come into the towns to earn money by singing, selling flowers and fruits, or by serving as models for artists. Sometimes they help to care for the silk-worms which, you know, are very dainty as well as



"It makes me no hungrier to sing and it makes me warmer."

(Continued on third page of cover.)

September, 1901

TOPICS FOR THE YEAR

June, 1902

	GRADE I.*	GRADE II.*	GRADE III.*	GRADE IV.	GRADE V.	GRADE VI.	GRADE VII.	GRADE VIII.	HIGH SCHOOL
Sept.	Apples and cider. Needs of the body—food, clothing, shelter, exercise.	Head; face, mouth, teeth, hair.	Special senses. Skin and cleanliness.	Body as a whole. Bones and joints.	Alcoholic drinks.	Review work of fifth year, especially alcoholic drinks and narcotics; nervous system.	Tobacco and kindred narcotics.	Review work of sixth year, especially tobacco and alcoholic drinks.	Fermentation.
Oct.	How to sit, stand and walk. Growth, height, weight.	Skin and its care. The voice.	Organs of breathing. Physical exercises.	Muscles.	Brain and nerves.		Food—its mission in the body.		Cells and tissues.
Nov.	Grains—their right and wrong uses. Cigarettes.	Sense of hearing. Sense of sight.	Food. Stomach and digestion.	Special senses.	Cigarettes and tobacco.	Heart and circulation of the blood.	Alcoholic drinks.	Bones.	Organs of the body.
Dec.	Parts of the body. Cleanliness.	Beer and other drinks made from grains.	Heart. Blood and its work. Cigarettes.	Nerves and Brain.	Food and drink.	Bones.	Digestion.	Muscles.	Secretion. Excretion.
Jan.	Food. Water.	Fruits and their uses. Sense of taste.	Alcoholic drinks; beer, wine, cider.	Tobacco. Skin and bathing.	Digestion.	Muscles.	Assimilation.	Circulatory system.	Food. Digestion.
Feb.	Body as a whole; uses, care.	Food; what to eat, when and how.	Muscles; care and development.	Food. Digestion.	Assimilation and secretion.	Growth and repair of the body.	Cell life and growth.	Respiratory system.	Lactals. Lymphatics.
Mar.	Upper limbs; arms, hands, fingers.	Sense of touch. Sense of smell.	Teeth. Bones and joints.	Heart. Blood and its work.	Excretion.	Special senses.	Organs of the body.	Renal system. Skin.	Nervous system.
Apr.	Head; face, hair, teeth.	Cigarettes; their effect on growth and strength.	Brain and nerves.	Lungs and breathing.	Respiration.	Covering of the body.	Nervous system.	Special senses.	Bones.
May	Trunk. Lower limbs; legs, feet, toes.	Review body as a whole; senses of sight and hearing.	Review food; digestion; heart and circulation.	Beer, wine, cider.	Review first half of year's work.	Review all fifth grade topics.	Review first half of year's work.	Review all seventh grade topics.	Muscles.
June	Review all topics of the year.	Review food; fruits; grains; senses of touch, taste, and smell.	Review senses; skin; muscles; bones; brain and nerves.	Review of year's work.	Review second half of year's work.	Review all sixth grade topics.	Review second half of year's work.	Review all eighth grade topics.	Review all topics of the year.

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(Continued from page 15).

very greedy creatures, for they will eat nothing but fresh tender mulberry leaves and a great many of them. Sometimes we find a few silkworms which have been thrown out, and keep them until the cocoons are formed. These are sold and a few pennies are earned in this way.

So every day is not a carnival for the little people in Italy. But if we can work or play with others, for we do not like to be alone, we are brave and enjoy what we do have and try not to think of what we do not have, and cheerfully sing and play, for, as one little boy said, "It makes me no hungrier to sing and it makes me warmer."

Some day perhaps you will come to Italy to see our beautiful country, our grand churches and wonderful paintings and marble, but when you come, we hope you will not forget us, the children of Italy, and will try to get acquainted with us and with our fathers and mothers. In this way we may understand each other better, although the languages we speak and the things we do and the pleasures we enjoy are all very different.—Your cousins in Italy,

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BOSTON, OCTOBER, 1901

No. 2

A VAGABOND SONG

THERE is something in the autumn that is native to my blood—

Touch of manner, hint of mood:

And my heart is like a rhyme,

With the yellow and the purple and the crimson keeping time.

The scarlet of the maples can shake me like a cry
Of bugles going by,

And my lonely spirit thrills

To see the frosty asters like smoke upon the hills.

There is something in October sets the gypsy blood astir;

We must rise and follow her

When from every hill of flame

She calls and calls each vagabond by name.

—BLISS CARMAN.

THE FIRST AMERICAN PUBLIC SCHOOL

WE have many American institutions peculiar to our country and our government. Perhaps, however, no one of them is so marked, so distinctively American, as the system of public schools. Where did this institution originate? Which was the first public school in America?

The term American system of public schools has acquired a fixed and definite meaning. It is a public, or a free school. Free, not necessarily in the sense that the recipient of its benefits has nothing whatever to pay, for sometimes rate bills have been charged, or the parents of the pupils have furnished board for the teacher, or they have provided wood for the schoolhouse stove. Free in this sense means open to all, that is, public. The school is for the entire public.

But this term means more than public. An endowed academy is a public school in one sense; it is free or open to the entire public of the place where it is established. But it is made so by an endowment. Such a school would not be a representative of the American public school system. In addition to being open to the whole public a representative school of this system must be supported at public expense. This support may come largely from the state, or the county, or the city or township, or the funds may be appropriated by all three. The essential features of this system are that the schools are for the children of all the peo-

ple, and that they are supported either wholly or principally by taxation. A private school established by individuals or a collection of individuals—by a church, society or guild, or endowed by individuals, churches or guilds, whether with or without tuition—is not a representative of our public school system. The principle of taxation lies at the bottom of the American public school.

The Puritans of Massachusetts Bay from the beginning of their colony felt that the church and the school were essential to the welfare of the state. The church they supported by a tax from the first. For this they had abundant precedent in the mother country. To support a school by taxation they had no precedent. They, however, very soon established one. Learning and virtue must go side by side in the new world.

We are looking for the first school which was established by the public for the education of the youth of the locality, and was supported by taxation. Let us, then, examine the claims of the school established by the voters of Dorchester, Massachusetts, to which the Hon. Joseph White, Secretary of the Massachusetts Board of Education, refers as the "first school in the world supported by direct taxation or assessment on the inhabitants of the town."

Near the coast of the town of Dorchester was an island called Thompson's Island. This island on the 4th of March, 1635, was given by an act of the General Court of Massachusetts Bay to the inhabitants of the town of Dorchester, on condition that they pay to the treasury twelve pence yearly as rent.

A town meeting was held in May, 1639, and the following provision was made for maintaining a school on the plantation;

"It is ordered, the 20th of May, 1639, that there shall be a rent of twenty pounds a year forever imposed on Thompson's Island, to be paid by every person that hath property in the said island, according to the proportion that any such person shall from time to time enjoy and possess there, and this toward the maintenance of a school in Dorchester. This rent of twenty pounds yearly to be paid to such a school master as shall undertake to teach English, Latin and other tongues, and also writing. The said schoolmaster to be chosen from time to time by the freemen, and it is left to the discretion of the elders and the seven men for the time being whether maids shall be taught with the boys or not."

The next step taken by the town was to secure a teacher. Rev. Thomas Waterhouse was the first teacher of this school. In what month or upon what day of the month the school was first opened we can not now tell, but it is clear that it was opened some time during the summer or early autumn of that year, 1639. In the town records is this entry, made of a vote in town meeting on the 31st of October, 1639: "It is ordered that Mr. Waterhouse shall be left to his liberty in point of teaching to write, only to do what he can conveniently therein."

The school was now established. It became permanent and was never abandoned. This identical school has had a continuous existence to the present day. The tradition has been handed down that a log schoolhouse was built, located near the corner of Pleasant and Cottage streets, just at the western foot of Meeting House Hill. A succession of eminent teachers followed. A succession of eminent men here received the rudiments of their education. Here Rev. James Blake Howe taught young Edward Everett to read, to write and to spell. Mr. Howe was the first teacher in the new brick schoolhouse, built on Meeting House Hill, in 1798. Here Edward Everett, when a small boy, practised declamation.

The plan of taxing this island instead of the entire property of the town was a device which, doubtless, when it was adopted, seemed to the voters a better plan than to tax the entire property of the town for this special purpose. After a few years, however, it was found in practice that the collection of these rents or taxes on the small bits of land which had been apportioned among the taxpayers or freeman of the town was attended with much difficulty. It was found also that the tax which could be collected was not sufficient in amount to carry forward the school successfully. Moreover, the people found that the income from their several portions on the island was not sufficient to make it profitable. For these and other reasons on the "Seaventh day of the Twelfth moneth, in the yeare 1641" (N. S., Feb., 1642), the proprietors of the island made a direct conveyance of the island to the town for the special support of the school. By this conveyance they expected that the school would be more effectually and better maintained.

To this deed of conveyance seventy-one persons, "present inhabitants," subscribed their names, and the following memorandum was appended to the document: "That before the subscribing of these presents the donors aforesaid did further agree and declare that it was and is their mind and true intention that if at any time there shall happen and fall out a vacancy of a schoolmaster by means of death or

otherwise, yet the rents and profits issuing and arising of the said island shall be converted and applied only to and for the maintenance and use of the school, either by augmenting the stipend for a schoolmaster or otherwise, but not for any other use."

A new question now presented itself to the inhabitants of the town. Who shall be charged with the management of this school? At first it was directly in the hands of the town meeting. Then the details would naturally be directed by the "seven men"; that is, the select men.

At the March meeting, in the year 1645, the freemen in Dorchester voted to adopt "rules and orders concerning the school"; and these rules were confirmed by a majority vote of the inhabitants of the town present at the meeting.

About seven years ago Judge Draper, then of New York State, published some articles in the *Educational Review*, in which, with great boldness, he claimed that this American school system originated among the Dutch at Manhattan, now New York City.

At Manhattan, in 1633, among the officials of the Dutch West India Company, was Adam Roelandsen, "the schoolmaster," and Mr. Barnard in his *American Journal of Education*, 1862, says, "And the school which he taught, it is claimed, is still in existence in connection with the Dutch Reformed Church." But this was a private school and was not supported by taxation. Indeed, all the schools established in these English colonies in America, prior to 1639, were private schools. Taxation is essential to the generic idea of the American system of public schools.

Prior to this Manhattan school was one established at Charles City, Virginia, as early as 1621, by Rev. Patrick Copeland, who raised by subscription a large sum of money to found "a free school." The school was entirely a private school, not managed by the plantation nor supported by public money.

The Boston Latin School appears to have been begun in 1635, but there seems to be a lack of evidence that it received the support of the town till 1641. The first step, however, was taken in behalf of this school by the town, in that it elected the teacher in a legally warned town meeting. But, like many other cases, it is clear that the effort at first was to support the school on "a foundation" like the schools of old England at Eton, Westminster, Rugby.

The records of Charlestown have the following: "1636, June 3, Mr. Witherell was agreed with to keep a school for a twelvemonth, to begin the eighth of August and to have forty pounds this year." The record fails to give us the needed evidence that the school was supported by taxation till after the Dorchester peo-

ple had set the example. This one vote is all the record we find in the case. If this vote, in 1636, by which "Mr. William Witherell was agreed with to keep a school for a twelve-month, to begin the eighth of August and to have forty pounds this year," was passed in town meeting and not in a meeting of the proprietors simple,—if the same can be considered as conclusive evidence that the school was kept at that time, and that the forty pounds to be paid to Master Witherell was raised by taxation, then Charlestown has the priority. But there is, so far as I know, no evidence that the town supported the school by taxation till long after 1640.

It has been claimed that the first public school in America was at Dedham. The proof is clear that "the founders of Dedham at a town meeting held on January 1, 1644, old style (1645 N. S.), forty-two persons being present whose names are given in the record, passed the following vote:

"The said inhabitants taking into consideration the great necessity of providing some means for the education of the youth in our said town do with a unanimous consent declare by vote their willingness to promote that work, promising to put to their hands to provide maintenance for a free school in our said town. And further do resolve and consent, testifying it by vote, to raise the sum of twenty pounds per annum towards the maintenance of a schoolmaster to keep a free school in our said town."

The school was without doubt established and some years later a schoolhouse was built. Schoolmasters were from time to time employed, and thus Dedham takes her place with these other sister towns in the establishment of the American public school. It is clear that this school thus early established in Dedham was a free school, a public school in the proper sense of these terms, being supported by a distinct tax.

These first schools were inaugurated by the several towns, each acting for itself. In 1647,

the system was legalized and made obligatory by a school law passed by the General Court. This law made it compulsory upon the town to support a public school and to make education universal and free. Of this school the late Hon. John Dickinson says: "As this was the first law of the kind ever passed by any community of persons or by any state, Massachusetts may claim the honor of having originated the free public school." This law, however, only made compulsory upon all the towns that which had been voluntarily undertaken by a number of them.

In this law we find the following: "It is therefore ordered that every township in this jurisdiction after the Lord hath increased them to the number of fifty householders shall forthwith appoint one within their town to teach all such children as shall resort to him to write and read, whose wages shall be paid either by the parents or masters of such children, or by the inhabitants in general, as the major part of those that order the prudentials of the town shall appoint; provided those that send their children be not oppressed by paying much more than they can have them taught for in other towns; and it is further ordered that where any town shall increase to the number of one hundred families or householders they shall set up a grammar school, the master thereof being able to instruct youth so



Aber Falls, Wales.

"The shrunken brook grows broad again,
And leaps in a laughing waterfall."

far as they may be fitted for the university, provided that if any town neglect the performance thereof above one year that every such town shall pay five shillings to the next school till they shall perform this order."

Such were the beginnings of our New England public school system. From time to time appropriate legislation was enacted, for the General Court of this Commonwealth has always jealously guarded the interests of education. The institution which was thus early planted here upon the west coast of the Atlantic has from time to time extended westward. The English settlers here were pioneers. The

pioneers pushed westward until they had occupied the territory of New Hampshire, subdued the land beyond the Green Mountains in Vermont, made settlements upon the hills and in the valleys of the Berkshire region, dotted everywhere with farmhouses western Connecticut, leaped over the Dutch settlements in New York, planted freedom and education in the territory northwest of the Ohio, covered the plains of the two great valleys of the Mississippi and the Missouri with cornfields and wheat-fields, and finally, passing over the summit of the continent, they spread New England people and New England principles "where rolls the Oregon," and even to the Pacific Coast. And everywhere that these pioneers from New England went they planted the church and the schoolhouse. The American public school system was thus extended over the whole Northwest on this side of the mountains and beyond them in Oregon and Washington.

But there were two civilizations from the very start in the English colonies of North America. Plymouth and the Bay Colony represent the Roundheads; Virginia the Cavaliers. In an educational address at St. Albans, Vt., in 1881, Dr. J. L. M. Curry, in speaking upon the topic "Education in the South before the Civil War," said: "In proportion to the population, taking man for man, negroes excluded from the population, the South sustained a larger number of colleges, with more professors and more students, and at a greater annual cost, than was done in any other section of the Union. The same was true of the academies and private schools.

"In the matter of public schools sustained by taxation and free to all who choose to attend, the South was far behind the North in the provision made for universal education. No plans adequate for universal education existed.

"When the Confederate soldier furled his flag at Appomattox there was not a southern state that had a system of public schools; but now, in organic law and in statutes, universal education is recognized as a paramount duty. The newspaper press gives intelligent and effective support; party platforms incorporate public schools in the political creeds, state revenues are appropriated; local communities levy taxes, and scarcely a murmur of dissent is heard in opposition to the doctrine that "free government must stand or fall with free schools."

This was said in 1881, twenty years ago. Today it is true that every state in this Union and every organized territory has, established by law and in good working condition, a system of universal education based upon the American plan of public schools supported by taxation.

Let us pause for a moment to contemplate this gigantic result. A small plantation, situated

on the eastern shore of North America, for the first time in the history of mankind, taxes itself to support a school where all the children, rich and poor, high and low, plebeian and patrician, shall receive at public expense the rudiments of an education. That was the beginning. As a result today we have a nation holding sway from the Atlantic to the Pacific, with its southern borders upon the torrid zone and its northern extremity in the Arctic Ocean, embracing seventy-five million people with one single system of education, supported not by a central government but by the people themselves, through taxation upon their own property, in every state, in every county, in every municipality. This is something never before witnessed in the history of the world; an achievement in a quarter of a single millennium greater than any the sun hitherto ever shone upon. To quote once more from the address already referred to from Dr. Curry. He said: "Let me affirm with emphasis, as an educator, as a patriot, as an American, that on universal education, on free schools, depend the prosperity of the country and the safety and perpetuity of the Republic."

The progress of the race is steadily and constantly upward and onward. No one need to lie awake at night for fear that our national bark is going to founder in the deep sea, or break to pieces upon the rocks of some inhospitable coast. Doubtless there are dangers ahead. We are today confronted with many serious problems, but there have been pessimists always, and serious problems are always confronting a brave and prosperous people. Our fathers had them and overcame them. Like the poor we shall have them with us always.

From the beginning, however, the Anglo-Saxon race has been equal to any emergency. It has again and again overcome obstacles, dangers and difficulties which to many minds have seemed to threaten prosperity, and even existence itself. From the beginning of these early settlements nearly three centuries ago, dangers, difficulties, adverse circumstances have always threatened. It is equally true that the dangers have always been averted and the problems successfully solved. The same will be found true now. This hardy race shall triumph. American civilization is the hope of the world. The public school is the corner stone of our national superstructure. We shall find means adequate to the ends. Let us not forget, however, that the means must be used to accomplish the ends desired. It is highly necessary, that all the people recognize the value and the importance not only of education in general, but especially of the institution known as "The American system of public schools."—WILLIAM A. MOWRY, Ph.D. in *Education*.



THE VOICE

IN one of Browning's poems a withered old crone is able to influence the whole life history of a noble lady by her matchless voice which, he tells us,

"Changed like a bird's;
There grew more of the music, and less of the words."

We want such voices in the schoolroom. Fewer of the commands and exhortations which repel, and more of the gracious winsomeness which as surely attracts. It is the fitly spoken word which reaches hearts and influences lives.

Fortunately, voice culture is possible to all. The same natural advantages are not given to everybody, but there is always some foundation to build on, and the harshest natural voice trained and softened by practice is more pleasing than one with much greater possibilities which has been warped by misuse.

Sweet, low voices are as contagious as high-pitched, excited tones, and the teacher who controls her own voice finds discipline easier, and gains quicker response from her pupils.

A nasal twang is peculiar to some parts of our country. Atmospheric conditions may be partially responsible for this fault, but a more common cause lies in the habit of mouth-breathing. In children this is often due to obstruction in the nasal or vocal passages.

The nose and throat should be frequently examined by a physician when such trouble is suspected, and any abnormal growth removed. Often a slight and almost painless operation will render a disagreeable voice most pleasing.

The remedy for the much criticised American voice lies in the teacher's hands as well as the parent's. Let her be herself a model in gracious speech and teach her pupils the proper care of their vocal organs, and there will be radical improvement in the national voice.

(1)

A MUSIC BOX WE ALL HAVE

Place a small music box in sight of the children and set it going. Every little face will

kindle with interest and watch eagerly for what comes next.

Teacher: "This music box will play only three tunes, but I know one that will play any tune you like. Shall I tell you about it?"

"Though it can play so many tunes, and can laugh and cry just as you can, it is much smaller than this one on the desk, and does not look like it at all.

"In the first place it is larger at one end than it is at the other, and always stands upright on the small end.

"Another queer thing about this wonderful music box is that there is a hole right through it. This is to let plenty of air through to make the music. A little trap door is fastened on the top by a hinge and this shuts down when there is danger of anything but air getting into the music box.

"Strangest of all, it is always ready to play for people and never has to be wound up. How your eyes would sparkle if some one were to give you such a music box for your very own! But I am going to tell you a still more wonderful thing, you have one already, and so have I.

"I am using mine now when I talk to you. You all used yours when you sang this morning. What do we call it?"

Where do we keep these music boxes of ours? Point to yours. Find the large part at the top. This has a queer name. It is called the Adam's Apple.

Show the children a chicken's windpipe. Explain why it is made of cartilage instead of soft flesh, in order to make it stiff enough to stay open so that air can always pass in and out for the chicken to breathe. Why would not bone be a better material than cartilage?

Put your hands on your throats in front. What do you feel? Our windpipes are made of cartilage also, because we have to breathe through them all the time just as the chicken does, but ours are much larger and not at all the same shape.

(2)

WHAT WE CAN DO WITH THIS MUSIC BOX

What can we do with these strange little music boxes of ours? Give every child a chance to talk on this point, and to tell some of the ways in which he uses the voice he has been led to think of as a new and wonderful possession.

What do we call the tune which our music boxes play when we feel very glad and happy? When we feel sad or cross? Which do people like best to hear?

Sometimes we want to make our friends hear us when we are some distance away. How do we use our voices then? If they are too far off

to hear when we call loudly, perhaps we speak to them over the telephone. That carries the voice so far that it can be heard more than a thousand miles, farther than most of us have ever been, perhaps.

Suppose you did not have one of these little music boxes and could not speak at all, how could you tell your mothers when you were hungry and wanted your supper?

Yes, you could point to your mouth and to the empty table, and probably she would know what you meant. Your big brothers and sisters could write her a letter telling her what they wanted, or draw a picture of it. Deaf and dumb people do talk in these ways, but it is not like having a good voice and being able to use it.

People are not the only ones who have this kind of music box, although theirs are much the best in the world. This morning I heard a very tiny one up in a tree. It couldn't talk as your music box can, but it sang a lovely song. Whom do you think it belonged to? What other kinds of live music boxes do you know about? Where have you heard them? What did they sound like? Tell something about their owners.

Tell again some of the things we can all do with the voice, and I will write them on the board:

We can talk, laugh, shout and sing because we have voices.

We can let people know what we want better by talking than in any other way.

We can make people hear when they are at a distance.

The voice helps to make the world pleasant and cheerful to live in.

(3)

HOW TO TAKE CARE OF OUR MUSIC BOXES

How many have seen a blue jay? Here is a picture of one. What a beautiful bird he is with his bright blue and white and black feathers! But wait till you hear him try to sing. His voice is rough and harsh and does not match his fine feathers at all. Perhaps nobody taught him how to use it when he was young.

Some of our sweetest-voiced canaries come from Germany. How do you suppose they learn to sing so well? It is by always listening to good music. Just as soon as one of these birds utters a harsh note in his song he is taken away where the others can not hear him, and only the best singers are kept as models for the young birds. Which kind of a voice would you rather have, a canary's or a blue jay's? How can one get such a voice?

We can train our voices, just as the birds do, by listening to people who speak in sweet, gentle tones, and then trying to speak like them. What shall we do when we hear any one speaking in loud, cross tones?

WHAT A SWEET VOICE CAN DO

It was a beautiful morning and the sun was shining just as brightly as it knew how. Some of its golden beams found their way through the trees on a fine lawn.

What do you think they saw there? A lovely little boy. At least they thought he was lovely at first, for he had curly yellow hair and pretty clothes. But when he turned round the little sunbeams saw a very cross face.

What was the matter? Why he wanted a great big horse to ride like his father's. He had a little pony cart all his own, and the dearest little Shetland pony to take him everywhere he wanted to go, besides dozens of other pets and toys, but none of them pleased him today.

He fretted and stormed about the house until his mama could not bear it any longer, and sent him out on the lawn to stay by himself till he could speak pleasantly again.

Just about the time the sunbeams caught sight of him a little colored girl saw him too. He looked so cross she felt sorry for him.

"P'raps he hasn't anyfing to play wiv," she thought. So she toddled off home and presently came back with a big rag doll which her mama had made her.

"Oo can play wiv my dolly," she said, holding it up. "She's a lubly chile."

Somehow the little boy didn't feel so cross when he heard that sweet little voice. The frown went off his face and pretty soon both children were playing with the rag dolly as happily as you please.

Perhaps it made him ashamed to be discontented when he had so many playthings and the little girl had only her rag dolly. At any rate, he stopped fretting, and when his mama came to call her boy to supper, he was talking just as gently and politely as his little friend.

What kind of a voice did this little boy have? How did he abuse it? How did he feel when the doll was offered him? Why was he ashamed of the way he had fretted? What do you think would have happened if the little girl had been cross too? What good does it do to speak kindly to other people? How many times have we spoken gently today?

Proper breathing is essential to a good voice. Notice whether any child breathes through the mouth habitually, and if so find the reason and try to have it remedied.

These little music boxes of ours are very delicate and need good care to keep them in sweet tone all through our lives. One way to take care of them is not to try to sing when we have colds.

HOW CLARA HURT HER VOICE

Clara Lane was the best singer in her school.

Everybody told her what a sweet voice she had and it made her very proud.

One day there was to be a school concert and she was asked to sing a solo. When she got up that morning she was a little hoarse and her throat smarted and ached.

If mama had been there she would have kept her little girl at home, but she was at grandma's, so Clara went to school as usual and rehearsed her song two or three times.

When she tried to sing that night she broke down for the first time in her life. The doctor examined her throat and said she had strained it badly.

It was a long time before it stopped hurting her, and months before she could sing again, but by the time it was quite well she had learned how precious the voice is and how to take good care of it.

Here are some things for us to remember :

If we want to have good voices we must take care of them.

We must not strain our throats by singing or talking much when we have colds.

We must speak low and gently, and not strain our voices by screaming or singing too loud or high.

We must let tobacco alone because it hurts the delicate lining of our throats.

We must breathe sweet pure air and keep away from places where others are smoking.



"Oo can play wiv my dolly."

THE SONG OF THE GOLDENROD

I HAVE set my lights on a thousand hills,
I've illumined field and lane,
To guide you out of the Summerland,
Into Autumn's great domain ;

For the days are sweet, in this sunny realm,
They shine with a glory, all ;
So, come, I will show you, oh, weary ones,
The way to this kingdom of Fall !

There are asters waiting beside the brooks,
There are grapes in the sunny dells,
And a crimson light in the apple trees
Where the wren's soft choral swells ;

There are nuts grown
tawny with many
suns,
In this kingdom grand
and free,
And they shall be yours,
my weary friend,
If you'll seek this
realm with me.

Ah, ye who have borne
the Summer's heat
Through its weary
hours—oh ! see—
I have set my lights on
a thousand hills,
To guide you, by lane
or by lea,

Safe into the wonderful
kingdom of Fall,
All aglow with color
and light ;
Where the harvester's
song lulls the weary
to rest,

And an Edenland
bursts on the sight !

—HELEN CHASE.

"Children," said the teacher, while instructing the class in composition, "you should not attempt any flights of fancy, but simply be yourselves, and write what is in you. Do not imitate any other person's writings or draw inspiration from outside sources."

As a result of this advice Sammy Wise handed in the following composition :

"We should not attempt any flites of fancy, but rite what is in us. In me thare is my stummick, lungs, hart, liver, two apples, one piece of pie, one stick lemon candy and my dinner."—*Baltimore American*.

A New England school teacher received the following note from an anxious mother :

"Dear Miss, ples do not push Johnny too hard for so much of his brains is intelleck that he ought to be held back a good deal or he will run to intelleck entirely an I do not dezire this. So ples hold him back so as to keep his intelleck from getting bigger than his boddie an injooring him for life."—*Harper's Bazar*.

The etiquette that makes us do an insincere act is an etiquette to be avoided. Honesty of action is the foundation of the finest manners.

—*October Ladies Home Journal*.



BODILY CONTROL

THE most important bit of mechanism in a ship is the rudder which directs her course.

If this fails to work properly, the ship drifts helplessly at the mercy of wind and wave, no matter how powerful the engines are which send her on her way, or how strong the oak and steel of which her frame is made.

So the most vital factor in the human being is the nervous system. Its efficiency determines man's success in every undertaking, from the digestion of his dinner to the consideration of the weightiest problem of state. Anything, then, that impairs the working value of this controlling agency aims a paralyzing blow at the man himself.

In time of war the sentry who sleeps on duty is shot, but in peace many a wage-earner who is the author as well as the guardian of our prosperity dulls his brain with narcotics until his usefulness is seriously impaired if not altogether lost. This is a thought not to be omitted when we teach the duties and responsibilities of citizenship. Enemies who threaten our country from without call for vigilant defenders, but we must not forget that the most insidious foes are those within her borders which destroy the vigor and working power of her citizens.

Education must be our chief weapon in this battle. Teach every child the subversive power of narcotic habits and we may look for better citizens in the generations to come.

WHY A CONTROLLING SYSTEM IS NEEDED

Before assigning a lesson on the nervous system, spend a few minutes in explaining why the body needs such a set of organs.

Suppose, for instance, we wish to take a drive. The horse is hitched to the wagon, every strap buckled properly, the harness in perfect order, but no reins are put into the driver's hands. What will be the result? Why are reins necessary?

A large building is to be put up. A force of men is on hand, some doing one thing, others another, but there is one who seems to have nothing to do. He walks about and watches

what is going on, taking no active part himself, yet he is paid larger wages than the others. What is the reason? Why is he considered more valuable?

Refer to the attraction of gravitation which keeps the earth in its exact orbit year after year, to the balance wheel of a watch, to the discipline in an army, or to similar examples which will readily suggest themselves. Get reasons from the class why every machine must be under control to be of use; why superintendents or managers are employed in all kinds of business; and why "order is heaven's first law" in the movements of the sun and stars. Then put the following questions on the board as material for the first classroom exercise on this topic:

What are the different kinds of work which the body must do?

Can the various organs do their work without help from one another?

What has the nervous system to do with the rest of the body?

At the time of recitation find how fully the class have answered these questions by themselves, then supplement their work as may be necessary. Spend five minutes on the first question, asking each pupil to name some function of the body. Appoint one or more pupils to act as critics and decide by reference to the text-book whether any function has been omitted. Bring out the same facts in another way by asking how the body is supported, how it can move about, how every part is nourished.

The class may not agree in their answers to the second question. In that case ask one of the girls to tell why the treadle of a sewing machine would be of no use by itself. Show that the same is true of the wheels, the bobbin, and the needle. Why are these parts valuable? Refer to a wagon to make the same fact clear to boys, and have them show that its various parts are of use only as they are properly put together and work in unison.

Suppose a person were to have his arm taken off. It might still contain every bone, muscle and joint in perfect order, but he could not use it. Why not? What is necessary to every movement of the body?

Show a large chart of the nervous system. Have the class find from it the brain and spinal cord, then trace the connecting links between these great centers and every part of the body. Have them think what nerves are for, and point out the nerves which are used in moving different parts of the body.

What messages are sent to the brain when the dinner bell rings? To what parts of the body does the brain send return messages? What would be the result if these messages could not

be sent? Bring out by similar questions the relation of the brain to different muscles of the body, to the skin, and to other parts where this can be readily traced by the class.

The nervous system controls also those processes of the body which go on without our knowledge, such as the digestion of food, breathing, and the work of the heart. Find what would be the result in each case if this were not true. Why is it a good thing that we do not have to think about it every time we breathe, or at each heart beat? What part of the nervous system does this work for us? What have the nerves to do with it? How is it that every part of the digestive system knows just when to do its work? Where is the manager that controls the whole? What would happen if he ever went off duty?

HOW THE NERVOUS SYSTEM CAN BE TRAINED

Put on the board what Mr. Schwab said recently before the industrial commission:

"Brains are wanted, not money."

Why is this statement important coming as it does from the only man in the world who gets a salary of a million dollars a year? Name some of the people you have read or heard of who have plenty of brains and use them to good advantage. Why is it better to be able to do something a little better than those about you, than to have plenty of money? In what lines of work are brains needed?

Let the class answer such questions as these until they realize the importance of brain power in every kind of business as well as in every profession.

Tell the parable of the talents. How did each of these men use his money? What capital does everybody have which is worth more than money? How can we increase our brain power?

Ask how a man goes to work to double his money; what a boy does to become a champion football player; how a great pianist makes himself master of his instrument. Show that the brain and entire nervous system can be educated or trained in the same way to do ever

better work by giving them constant practice.

Tell the class that this is the great reason why they are given lessons to learn in school, to increase brain power by the effort they must make, just as one uses his muscle to make it strong. This is why it is easy after awhile to add and multiply quickly, although it is so difficult at first.

Why is it better training for the brain to get a lesson quickly than to be all day about it? Bring out the essentials in learning a lesson as quickly as possible. What games give the nervous system good training? Show how each does this.

HOW THE NERVOUS SYSTEM MAY BE INJURED

Make it clear that one important factor in the training of the nervous system is that there should be no weak spots. It must all be educated. A blind horse may be a beautiful animal and a fast traveler but no one wants to buy him if he cannot see.

Show how the same is true of the nervous system. If the nerves which control digestion, for example, are weakened by overeating, or by improper food, neither the brain nor the body can do its best work. If one breathes bad air all the blood is impoverished. Business men who want the greatest value for the wages they pay will not hire boys who smoke cigarettes or men who drink. Why not? Evidently because such narcotics in some way weaken working ability.

Have the class show how they do this by finding what will make one a good workman in any kind of business, and then how the use of tobacco or alcohol can hurt his usefulness.

Suppose a merchant hires a bookkeeper and finds after awhile that he drinks, why is he likely to dismiss him? What qualities does one require in a bookkeeper? Find how the use of liquor affects each? Does one work faster or slower after drinking a glass of beer? What is true of the probable accuracy of his work? Why does he think he works faster and better?

A political speaker must possess certain qualifications, what are they? Why is it always unsafe for such a person to drink? Why will the use



A coming prima donna

of narcotics be likely to prevent a man from becoming a good lawyer? a doctor? a base ball pitcher? a mechanic?

What kind of workmen are needed in the lumber camps of the north? In the cotton and rice fields of the tropics? Many of the former drink whiskey to keep them from freezing, while the workers in the hot countries do the same to prevent sunstroke. How do we know that alcoholic liquors cause these very troubles they are supposed to prevent? Why do people think they are warmer after taking them? Why do they really suffer more severely from cold? How can alcoholic drinks make a person more liable to sunstroke?

A large proportion of the suicides and murders which occur are due to alcohol. How is this possible? How can the use of narcotics weaken or destroy one's power of self control? Why may such a loss shut one out from success in any kind of work?

The important fact of all to leave with the class is that success or failure in life, brain control or the lack of it, does not come in a moment or go as quickly. It is a matter of small beginnings and of steady growth. Make sure that all realize the harm in the first glass of beer or the first cigarette.

Ask them to tell how they would build a bonfire. Why would they not bring great logs of wood together and try to light them with a match? Why are paper and kindling needed. Help all to see that the great danger in beer, wine, cider and cigarettes lies in the fact that these, too, are kindling wood for larger appetites which may finally destroy all self control and every possibility of success.

AUTHORITATIVE QUOTATIONS

BEER DRINKING DULLS THE NERVES OF SENSATION

Professor Kraepelin claims that in his recent experiments even so small a quantity of alcohol as is contained in a quarter or half a liter of beer much retarded the perception of impressions received by the senses, and rendered the combination of ideas much slower. The effect of alcohol on the brain continues more than twenty-four hours, sometimes several days.—*Bulletin American Medical Temperance Association.*

WINE NOT A BRAIN FOOD

Wine, kola, cocoa, excessive quantities of coffee and tea, while they temporarily cause work done by means of nerve force to seem lighter, do so only by using up those units of force

which a man ought most sacredly to keep as his reserve fund.

J. HOBART EGBERT, M. D., Ph.D.

ALCOHOL ALWAYS A DECEIVER

The feelings are no guide at all as to the real effect of alcohol. It produces the feeling of warmth, but the thermometer proves that the heat of the body is decreased even by small doses. The feeling of muscular strength is increased, but the dynamometer proves that muscular contractions are weaker. Men believe that they are wiser, but their sayings are more automatic and apt to be profane. "It produces progressive paralysis of the judgment," said Dr. Lauder Brunton, and this begins with the first glass.—*Medical Temperance Review.*

ALCOHOL A LEADING FACTOR IN INSANITY

About half of the suicides and murders in this country are due to the excessive use of alcohol, and happen in the early stages of alcoholism and alcoholic insanity. Suicide and murder are the acme of all examples of the loss of self control.—T. S. CLOUSTON, M. D., MEDICAL SUPT. ROYAL EDINBURGH ASYLUM.

ALCOHOL CAUSES MORAL DECAY

Strong drink makes a deadly assault upon truthfulness. Coupled with this loss is the weakening of the will. The man loses, little by little, the mastery over himself; the regal faculties are in chains. The loss of self respect, the lowering of ambition, and the fading out of hope are signs of the progress of this disease in the character. And these tendencies appear, not in notorious drunkards alone, but in the lives of those who are never drunk.—CHAS. F. PALMER, M. D.

THE DANGER IN THE FIRST GLASS

The power of alcohol upon the nervous system to establish a "habit" is one of its most dangerous qualities, and makes it a thing to be avoided. No one knows when he takes his first glass of beer or wine or cider, whether it may not be his fate to become a victim of the habit.—HENRY F. HEWES, Instructor in Physiological Chemistry, Harvard.

TOBACCO WEAKENS BRAIN POWER

In boys addicted to the tobacco habit, I find a nervous irritability and an inability to do the work that properly belongs to boys of their age. Where the habit has been abandoned I have found a marked improvement both mentally and physically.—M. F. STARR, Principal High St., School, New London.

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"October is the month that seems
All woven with midsummer dreams,
She brings for us the golden days
That fill the air with smoky haze.
Now one by one the gay leaves fly
Zig-zag across the yellow sky;
Now half the birds forget to sing,
And half of them have taken wing,
Before their pathway shall be lost
Beneath the gossamer of frost."

A NOBLE INHERITANCE

ALL who read Dr. Mowry's account of the origin of free public schools will be interested to know that the headquarters of Scientific Temperance Instruction stand on the same historic ground. Less than a mile distant was the first schoolhouse ever opened for the free public instruction of children. Barely a stone's throw away is Hancock street, along which soldiers and farmers marched by night to fortify Dorchester Heights against the British in the early days of the Revolution. Women tore up sheets and even their petticoats into strips that night to wind the wheels of the carts, and so silently was the work completed that only frowning breastworks told the story to the enemy next morning and warned them that their safety lay in flight.

The spirit of the early fathers, who voluntarily taxed themselves that their children might have an education, and of their descendants who fought for the freedom of their homes, has not died out. It dominates all those who long for the deliverance of the nation from the bondage of alcohol, and who strive to bring it about by insuring to every child in the public schools a thorough temperance education.

Our ancestors builded better than they knew. Their only object was to educate their own children, to secure liberty for themselves, but out of their work sprang the universal education of today and our great free government. Our work, too, is for the future and we dare not neglect it, for upon the sobriety of coming generations depends their ability to pass on the noble inheritance.

WRONG IDEAS CORRECTED

A WEEK in the field has shown that the old fallacies urged by the uninformed against this study are still afloat in some sections. Therefore, brief space will be given to such fallacies under the above heading in different issues of the Journal for this year.

WRONG IDEAS ABOUT FERMENTATION

Critics have said that it is not necessary to teach fermentation and distillation as a part of the physiology and hygiene lessons, that it is teaching children how to make alcoholic liquors. Such a criticism is based on a lack of knowledge of the facts. It is one of the objects of hygiene to teach what one should eat and drink and what one should not, and why. People who have not been taught otherwise think that because grapes, apples and other fruits are good the wine and cider made from their juices must be good also, and that beer must be nutritious because the barley it is made from is nutritious.

This fallacy has led to the drinking of cider, wine, beer, and other fermented liquors, and to consequent drunkenness. This error and its results can be corrected only by teaching the facts about the process of vinous fermentation which in ordinary conditions begins soon after the juice is pressed from the fruit, and changes the character of such juice by causing alcohol to form in it. Alcohol is an enticing poison. A little of it in fermented drinks has the power to create an uncontrollable and destructive desire for more.

The study of fermentation answers the question children always ask, "Why are wine, cider and beer bad when the grapes, apples and barley they are made from are good?" Teaching the facts about fermentation first, and then about distillation, removes the old false notion that whiskey must be good and must add strength because it is made from strength-giving grains like corn and rye.

Modern study of this subject shows that the food qualities in fruit juices and grain solutions are so largely changed by fermentation to the poison alcohol as to leave not enough of food value in these liquids to be worthy of the least consideration.

The study of distillation shows that by the evaporation of the water in a fermented liquor whiskey and other distilled drinks become very strong in alcohol, and therefore contain the more poison. These and other facts pertaining to this phase of the subject constitute an essential part of the intelligent study of temperance hygiene. They are an appeal to reason, for they show how the food qualities in fruit and grain liquids become poisonous, changing the character of the drinks.

A LESSON FOR THE AMERICAN PEOPLE

A NATION in tears describes the scene in this country on Thursday, September 19th. Throughout the land the wheels of industry and travel stopped, the artisan, the farmer, the merchant, the laborer, the scholar, the toiler in every department of the world's work, the idler, the pleasure seeker, and even the children stood with bowed heads from ocean to ocean and from the Lakes to the Gulf, singing the hymn that voiced the dying prayer of our nation's chief:

"Nearer my God to thee,
Nearer to thee,
E'en though it be a cross
That raiseth me."

And as they sang, the great man whom we had clothed with the dignity of being the head of this republic of 75,000,000 people, the best beloved of all our presidents, was borne to the tomb.

There is always an impressiveness about last words. Of one thing we are sure, they are sincere. The soul facing the gates of death has no subterfuges. Among the most memorable of last words those of President McKinley will ever rank first: "It is God's way. His will be done."

Although this Christian hero had risen to a lofty height of earthly attainment, position, and fame, he was scarcely at the zenith of his days, and, but for the assassin's hand, the prospect was still before him of years of even greater service as the leader of the people who delighted to honor him. The life of the beloved wife had been given back to his tender care, a care that because of his conspicuous position has shown him before the world to be the truest of all knights, wearing always in the might of his great strength the "white flower of a blameless life."

He was in the midst of his years, strength, fame, glory, and of the love not only of his own people but that of the peoples of all the civilized world. His future had boundless prospects of further opportunities for still greater service for the country he loved. Nevertheless, from all these he turned with composure to face the last scene in the drama of life. With no thought of the cruel human instrumentality that was sending him to a premature death, his thoughts instead seem to have been on the divine will for us, the people he loved, as well as for himself in this awful tragedy. His last words as he passed into the unanswering silence of the tomb, "It is God's way. His will, not ours, be done," raise the question, does the dying hour bring deeper insight into God's "way"? As the shadows come upon us shall we begin to understand the mysteries of life? Is seeing the loving wisdom in

those before unknown mysteries a part of what we call "dying grace"? We shall all know in due time, for every one of us must pass through the door that opens only outward.

What is this which our dying President called "God's way," to which he bowed in loyal submission? The pain and stress of dying seem to have been lightened for him by a clear vision of the compensations awaiting his vicarious death in that way of suffering. I say vicarious for he was slain because he represented us, slain because he was the chief magistrate of our government of the people. How great he was to divine so quickly that it was by the way of tears for the people and of death to him that this nation is to learn its deepest lessons!

Shall we learn these lessons is the question we must strive to answer as we turn again to the duties of life from this world-mourned grave. One of the most impressive is the vital necessity to a government of the people that all its inhabitants have intelligent ideas as to what real liberty is. Czolgosz, who killed our President, is an anarchist. We are realizing now, with awful intensity, the danger of having even a few people in our land who hold such ideas. That they and their wicked teachings must be suppressed is the universal demand. So let it be.

But did you observe that Czolgosz' father is a saloon keeper, and that Czolgosz himself has been in that business? Did you read that the saloons are the audience rooms where Emma Goldman preaches her doctrine of death to rulers which inflamed the act that has plunged this nation in tears? Did you read in the great dailies of the land that the saloons are the headquarters, the rendezvous of the anarchists of this country? Have you noticed that experts in neurology have pronounced Czolgosz a degenerate?

Your studies in modern sociology have shown you that it is the nature of the alcohol, which is the basis of all drinks the saloon has to sell, to make anarchists. Alcohol saps that vital force and purpose that make an achieving man. It produces the shiftless idle class that clamors against property rights and demands that the man who works should divide with the man who will not work.

Have you observed that it is the nature of alcohol to destroy family affection, to sever the family ties that the anarchist ignores, and to induce the criminal disposition with its contempt of law, and abnormal brain development that responds to suggestions of violence against society?

If you have been a close student of the testimony of modern science to all this, you will see that if we are to stamp out anarchy in this country we must close the institution which is out of

harmony with our liberties, the saloon. Under a government of the people like ours the saloon will never be closed until a majority of the people know better than to want to buy what the saloon has to sell. Thus the education that warns the rising generation against alcohol buttresses the foundations on which our free institutions rest.

Ho! for the Bending Sheaves

Ho! for the bending sheaves,
Ho! for the crimson leaves
Flaming in splendor!

Season of ripened gold,
Plenty in crib and fold,
Skies with depths untold,
Liquid and tender.

Autumn is here again—
Banners on hill and plain
Blazing and flying.
Hail to the amber morn,
Hail to the heaped-up
corn,
Hail to the hunter's horn,
Swelling and dying!

—JAMES RUSSELL LOWELL.

In an address at the New York City Normal College Dr. Norman A. Calkins of revered memory said: "There is something more to be done besides getting the proposed knowledge into the mind; that knowledge must be appropriated in such a way that the child becomes more reasonable, just, obedient, mentally active and morally elevated."

By careful training of the brain and nervous system, man so multiplies himself as to do the work of many untrained men. Gladstone, at seventy-five, had multiplied himself into a man twenty times as efficient as he was at twenty-five.—J. LINCOLN BROOKS.

I will govern my life and my thoughts as if the whole world were to see the one and to read the other.—SENECA.

True success in life consists in doing common things uncommonly well.—JOHN D. ROCKEFELLER.

THE DIMENSIONS OF LIFE

Phillips Brooks in "Symmetry of Life" likens life to a cube in these words: "There are three dimensions, then, of a full human life, its length, its breadth, its height. The life that has only length, only intensity of ambition, is narrow. The life that has length and breadth, intensity of ambition and broad humanity is thin. It is like a great flat plain of which one wearies of itself. The life which to its length and breadth adds height, which to its personal ambition and sympathy with man adds love and obedience to God, completes itself into the cube of the eternal city and is life complete."—*Michigan School Moderator*.



Borrowdale Birches, England.
"Where birches throw
Still tangled etchings on the amber pools."

Brains and great executive ability are potent factors in a man's success, but without the firmest and most thoroughly grounded principles of cardinal honesty they are factors which can not make for success. It is the combination of great ability and sterling integrity that places men in control of large interests and keeps them there.—*Ladies' Home Journal*.

Johnny: "Mamma, I can count all the way up to twelve."

Mamma: "And what comes after twelve, Johnny?"

Johnny: ".Recess."
—*Ex.*

An Autumn Recipe

"Take a world full of crimson,
Mix well with warm gold,
And blue tints and bronze tints,
And brown tints, I'm told—
Quite sober—

"A dash of pure purple,
A pinch of pale pink,
And green just to suit you,
You'll have then, I think—
October!"

CHILDREN OF MANY COUNTRIES

II. HOLLAND

SHALL we take a ride today on the wings of our thoughts? One instant, and we are across the seas in a little country north of France, Holland, or the Netherlands as it is sometimes called. Can you tell why?

Holland is a queer little country unlike any other in the world. You have read in your geographies, perhaps, how the people have built great walls or dikes to keep out the sea, while behind the dikes, cutting through the land itself, is a whole network of rivers and canals. There is so much water that some of the Dutch boys and girls are born, grow up, live all their lives, and finally die on house boats. Hundreds of windmills which have a style all their own dot the land, pumping water and furnishing the power for doing many other kinds of work.

It is a glorious country for children. In summer they may sail their tiny boats on ponds or lakes, swim and fish, row and sail. But perhaps they have even more sport in the winter, when they put on their skates and skim along over the ice like so many birds. "What fun to skate to school and back, to skate to market for apples and nuts, to skate in companies—made up of five or six rows with five or six boys and girls in each row, all taking hands—to skate to a neighboring village or town, to have skating matches, skating games, skating clubs!"

You will enjoy your visit to Holland better, perhaps, if you know some one here. This is Katrina Barneveldt. A quaint little maid is she. Were it not for her bright happy face you might almost think her a woman instead of a little girl like some of you, for she is dressed just like her mother and other women of her country. Her white lace cap is pinned on with two great round-headed pins. Her long black dress nearly reaching the ground is almost covered by her spotless apron, and she wears wooden shoes, or pattens. If it were cold weather, she would have a small shawl crossed over her shoulders, the ends neatly tucked under her apron strings.

Katrina's brothers dress like the men, in black jackets and trousers, black woolen stockings, and white wooden shoes. You can imagine the clatter these shoes make when a group of boys race over the paved street. Out of their old wooden shoes the Dutch boys sometimes make tiny fishing boats which they sail in the ponds or canals, and the shape of the wooden shoe boat is really not so very different from the large fishing boats of their fathers.

The long woolen stockings which the boys and girls wear are hand-knit, and the girls are kept very busy supplying the family. They nearly always have their needles and a partly

finished stocking by them, and when they have nothing else to do, their hands are not idle. They become so skilful that they can watch other children at play or the passers-by without looking at their work, the knitting-needles meanwhile flashing in and out of their busy fingers.

The Dutch children begin very early to help their parents in many ways. The boys go with their fathers in the canal boats, or out to sea to fish, peddle various small wares in the streets, or help in caring for the goats, the fowls, the bees, and the sleek black and white cattle for which Holland is famous.

The girls help their mothers make butter and cheese. Perhaps you may have eaten Dutch cheese at home. It is made of cream and pressed in clean white earthen moulds into the shape and size of cannon balls. After they are taken from the moulds the cheeses are colored orange or red, and oiled or wiped until they shine. Sometimes in the market to which they come by boats full, you will see the cheeses stacked in piles like cannon balls.

The girls must help too in keeping house, for they live in such a damp country that if they were not continually rubbing and polishing, rust and mould would soon spoil everything. In some parts of Holland one hardly dares walk in the streets on Saturday without an umbrella and thick shoes, however fine the day may be, for water is being thrown on the front of each house, pails full are being poured out of windows or dashed on the steps and pavements so that even a careful passer-by can hardly escape a drenching. Even the dairies and stables receive the same care and are as neat and clean as the houses in which the people live. At least once a week the wooden shoes are whitened. These are usually left outside lest they bring a bit of dirt into the spotless house. Sometimes one can tell which buildings are the schoolhouses by the piles of small wooden shoes in front. What a scramble for shoes there is when their little owners are in a hurry to go out to play or home for dinner!

What are the homes of the children like? In many of them the kitchen is the principal room, and it looks very cheery with its red brick floor sprinkled with sand, its chairs and tables which have been polished until they shine, and the bright gleaming copper pans and kettles. In some of the farmhouses the kitchen is surrounded by a number of little rooms each just large enough to hold a bed. Perhaps the houseboat children have the quaintest homes, as they are built on rafts. With their prettily curtained windows, gay blinds, and bright plants and flowers, these little homes look quite attractive as they float down the rivers from Germany

where their owners have been to buy earthenware and perhaps other articles to sell in Holland.

In the Netherlands, as in other countries, the children have their festival days when all is gaiety and excitement. Easter and May Day, Whitsuntide and Christmas, each has its own joys. Santa Claus is an especial delight, and a very real person to these little people who find his gifts sometimes in cabbages or pumpkins, or sometimes in his own pack as he appears before them.

If the Dutch boys and girls want to spend a holiday quietly, there are many interesting things for them to see: the picture galleries in Rotterdam, Leyden and other cities, containing the paintings of famous artists of whom Holland has had many; museums in which curious things from all parts of the world have been gathered; the flower gardens of Haarlem where many of our choicest tulips and other bulbs are raised; the wharves and great docks from one of which we shall presently sail for home. Perhaps, too, they may sometimes get a glimpse of their young queen, who, although she is no longer the "child queen" whose work and play used to interest all Dutch children, is still dearly loved by them.

Though the children of Holland live in a little country it has long been a famous one, for the industry, the honesty, the energy, and the love of liberty among their people made it once one of the world's great nations. And as we turn our faces homeward, we, too, may feel with the Dutch boys and girls a loyal love for Holland, because it was some of her boys and girls of old who as men and women helped to make the United States what it is today.

SUGGESTIONS FOR THE TEACHER

Interesting supplementary work might be done on the subject of Holland along the following lines:

Holland and the Pilgrims.

Dutch settlements in America.

Famous American families of Dutch descent,

The Schuylers, Roosevelts, Vanderbilts.
Famous Dutch painters,
Rembrandt, Paul Potter, Jacob Ruysdael.

COURSE OF STUDY FOR INDIAN SCHOOLS

The manuscript of a uniform course of study for the Indian Schools is now in the hands of the printer. This course has been in preparation by the General Superintendent of Indian Schools for the past three years, and by those to whom it has been submitted for inspection it is said to be the best and strongest ever devised for the peculiar educational system of the Indian Office. Thirty-one subjects are treated, and especial attention is given the industrial branches, instruction being given in agriculture, baking, basketry, blacksmithing, carpentry, cooking, dairying, engineering, gardening, harnessmaking, housekeeping, laundering, printing, painting, sewing, shoemaking, tailoring and upholstery.

The course contains Miss Reel's ideas, gleaned from personal observation in the field, of the needs of the Indian School service, together with the views of prominent Indian workers in the United States, many of whom have given the subject life-long study. A uniform course of study for the Indian School has long been needed, and, although attempted several times before, this is the first comprehensive work to be completed in book form.

Miss Reel, who enjoys a national reputation as an educator, deserves much credit for the practical way in which she has adapted the teaching of the various subjects to the needs of the Indian, and great benefit will no doubt result from the use of this course.



"A quaint little maid is she."

Bennie has spoken aloud in church, and to mamma's caution against doing it again he exclaimed: "But mamma, when my mouth's so full of talk I can't help it's leaking some!"

—Ex.

A NEW TEMPERANCE CRUSADE

NO business in the world can withstand a well organized boycott. The occasion is now at hand when a boycott may be inaugurated against the saloon business which shall permanently close many a dram shop. Sunday, November 24, has been designated by Christians the world over as *Temperance Sunday*, when it is recommended that all the exercises in the various church services shall be in keeping with the designation of the day. What a splendid thing it would be if each person who attends a church service on that day could be induced to sign a temperance pledge! From the Sunday Schools alone there would be some eighteen million pledges.

Hugh Cork of Pittsburgh, Superintendent of House to House Visitation for the Pennsylvania Sabbath School Association, suggests among others the following admirable plan for united temperance work at this time:

"Pledge cards may be prepared and distributed to the various classes in the Sunday School, urging each scholar to get signers from the children about their homes who do not attend Sunday School, and from adults in the neighborhood not connected with churches. A special prize or temperance banner may be given to the class securing the largest number of pledges. Plenty of pledge cards should be placed in the church pews and a plea made for signers at all the services on November 24. A temperance rally can be planned with fine effect for the afternoon or evening of this day, at which prizes may be given to successful Sunday School classes."

Almost all of any community could be thus personally reached and that by "the little child who shall lead them."

In connection with the pledge taking there should be clear and full explanation of the reasons why the use of alcoholic beverages even in small quantities is harmful, and consequently why total abstinence is necessary for individual welfare and for the perpetuity of the race and nation.

May this first year of the new century witness a crusade which shall be blessed of God in protecting the holy innocence of childhood against the barbarian hosts of intemperance.

Freddy, the son of a well known minister, had misbehaved, and to punish him, he was not allowed to eat at the family table. A small table was set for him in the corner of the dining-room. When his dinner was placed before him, Freddy said very solemnly:—

"Lord, I thank thee that thou hast spread a table before me in the presence of mine enemies."—*Judge*.

BOOK NOTICES

GRADED MEMORY SELECTIONS, arranged by S. D. Waterman, Supt. of Schools, Berkeley, Cal., J. W. McClymonds, Supt. of Schools, Oakland, Cal., and C. C. Hughes, Supt. of Schools, Alameda, Cal. Full cloth. Price 25 cents. Educational Publishing Company, New York.

The basis of all culture lies in a pure and elevated moral nature, and so noted an authority as President Eliot, of Harvard University, has said that the short memory gems which he learned as a boy at school have done him more good in the hour of temptation than all the sermons he had ever heard preached. A fine thought or beautiful image, once stored in the mind, even if at first it is received indifferently and with little understanding, is bound to recur again and again, and its companionship will have a sure, if unconscious, influence. The mind that has been filled in youth with many such thoughts and images will surely bear fruit in fine and gracious actions.

To the teachers who are persuaded of this truth, the present collection of poems has much to recommend it. The selections have been chosen both for their moral influence and for their permanent value as literature. They have been carefully graded to suit the needs of every class from the primary to the high school. Either the whole poem or a sufficiently long quotation has been inserted to give the child a complete mental picture.

The teacher will thus escape the difficulty of choosing among a too great abundance of riches, or the still greater one of finding for herself, with few resources, what serves her purpose. This volume has a further advantage over other books of selections. It is so moderate in price that it will be possible to place it in the hands of the children themselves.

AN AUTUMN BONFIRE

It's burning in the twilight,
Against the haze-veiled hill,
And casts its dreamy incense
Upon the breezes chill.
By all its pretty colors,
That ripple, fold on fold,
In richest orange, amber,
And cardinal and gold,
I know the flames, so fitful
And beautiful, are fed
By autumn's gorgeous leaflets
Of warmest gold and red.

—R. K. MUNKITTRICK.

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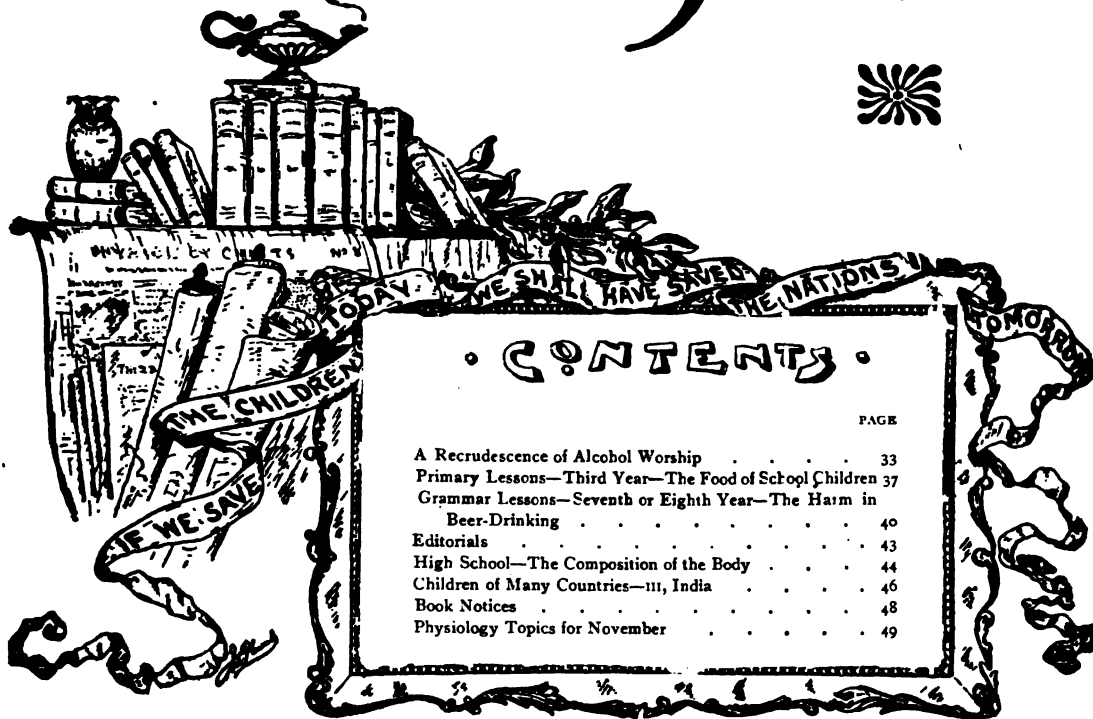
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THE SCHOOL PHYSIOLOGY JOURNAL



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...IMPORT A

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School Physiology Journal

Vol. XI

BOSTON, NOVEMBER, 1901

No. 3

A NOVEMBER MORNING

The distant hills are clothed in mist,
The nearer fields in green.
And like the organ's half tone scale,
The colors range between.

The summer crickets still chirp low,
A few birds sing their song;
While, in a harsh tone, late at night,
The crows call loud and long.

Our once gay trees are faded now,
And frost is in the air;
But ere the earth falls quite asleep,
The sun drops kisses rare.

SARAH TODD SPRAGUE.

A RECRUDESCENCE OF ALCOHOLIC WORSHIP

BY JOHN MADDEN, M. D.

RECENT agitation of the alcohol question shows an attitude by the laity towards the drinking of alcoholic beverages which may be stated in the following proposition: "Alcoholic beverages, under certain circumstances, are of the greatest value to the human organism, they are among the most important remedies in the physician's armamentarium, and they do harm only when taken in excess or when they are impure or adulterated." It would not be easy to discover the evidence upon which the public bases this verdict. It is a belief deep-rooted, cherished, and as permanently fixed as many of our religious tenets. Evidence of the most direct kind does not prevail against it; and whenever one supposed to be clothed with authority to speak upon the subject issues a pronunciamiento that alcoholic beverages are good, wholesome and necessary, a million voices re-echo it.

Alcohol has its advocates within the profession as well as without. Such a one gave voice to his sentiments at a meeting of the New York State Medical Association about a year and a half ago in the following remarkable panegyric: "Alcohol is the sheet anchor of the intelligent and conscientious physician. It may be stated, without likelihood of contradiction, that if whiskey was sold in its proper state, two-thirds of the crimes and four-fifths of the insanity charged to the account of alcohol would disappear from the indictment, so bulky and ter-

rible, that stands against it in the statute books of society. . . . Alcohol in the banquet hall, in the beer garden, and at the domestic hearth makes hundreds merry for every ten it makes miserable and for every one it destroys." (*The Medical Record*, November 11, 1899.) In spite of the fact that it called forth an indignant protest from well-known men in the profession (Dr. H. D. Didama, Dr. H. O. Marcy, and Dr. Frank D. Reese), one of whom characterized it as "utterly lacking in new information and thoroughly unscientific," it was eagerly seized by the manufacturers of a certain brand of whiskey to advertise their wares. Equally absurd was the opinion expressed, not so very long ago, on the floor of the New York Academy of Medicine, that "the candy shops do more harm than the saloons."

Pro-alcohol opinions as extreme as these, however, are rarely expressed by medical men. Indeed, one rarely hears alcohol spoken of in medical gatherings as a remedy of value.

The majority of medical men are disposed to regard it with less and less favor as the years go by, while those who have closely followed the thorough investigations into the physiological action of alcohol recently made by scientists of all nations have repudiated it altogether.

If I were permitted, therefore, to formulate another proposition which should be the best informed physician's, not a layman's, estimate of alcohol, I do not think that I should err if I should say: "Alcohol is an irritating narcotic of very limited value as a remedial agent; practically valueless as a food because of its poisonous properties; its imbibition is always attended by danger of producing the alcoholic habit; and it fulfils no therapeutic indication which may not be better fulfilled by some other remedy."

If it were possible to put the average layman in possession of all the facts relating to the alcohol question, and to educate him up to the point of understanding them—to make, in short, an expert physiologist, biologist and chemist of him—all difficulty of bringing about a revulsion of feeling which would at once sweep alcohol as a beverage into oblivion would be cleared away.

It is encouraging to know that whenever a physician puts himself in possession of all the facts relating to the effects of small or large doses, or any quantity of alcohol upon the human organism, he almost invariably discards alcohol as a medical agent of value. A notable

example of this kind was Kraepelin, who began his investigations with a bias in favor of "pure alcoholic beverages," but ended in discarding them in toto. In my own case, if I may be pardoned for mentioning it, my intention at the beginning of my work on the alcohol problem was to demonstrate the good in alcoholic beverages, especially in good beers. The evidence, however, led to conclusions diametrically opposed to what I had hoped to demonstrate.

The present status of the alcohol question, then, may be summed up as follows: There is an evident and very outspoken desire, upon the part of the laity as a whole, that alcoholic liquors of the so-called "best kind" should be regarded as beneficial to man, when used in moderation, and an equal eagerness to have this opinion bolstered up by scientific authority. The division of medical opinion upon the subject enormously strengthens the lay advocates of the alcoholic doctrine; but their influence is made still greater from the fact that they are supported by a majority of the great journals of the lay press and an occasional journal of the religious press.

These facts being held in mind it is easy to understand the recent recrudescence of alcohol worship which swept over our country two years ago. A chemist in the employ of the United States government, who is a teacher in a college and the author of several works on chemistry, issued a pronunciamiento (at least it had the effect of one upon the people) that "alcohol is a food and not a poison," and that this opinion was the result of experiments which he himself had carried out. The announcement created an enormous amount of interest. The sensational journals had flaming red head-lines, announcing the important "discovery," with a picture of the discoverer and the calorimeter he had used in his experiments. The principles involved in the construction of the latter were, of course, not understood by the average lay reader; but this made the machine only the more impressive, for it is the mysterious things in medicine which impress the unscientific.

It was not, however, in the sensational press alone that Professor Atwater's conclusions were received with so much apparent satisfaction. Some of the journals to which a vast number of scholarly readers look for information on topics of current interest, displayed scarcely less satisfaction in the pro-alcohol evidence resulting from Professor Atwater's experiments. The *Outlook*, a quasi-religious journal published in New York, received his conclusions as final, not omitting, at the same time, to arraign severely temperance workers as a class for teaching false doctrine. The *Outlook* told its readers, "The

intensity of their" (the temperance people's) "hatred for drunkenness has blinded their judgment. They have attempted to build reform on indiscriminate generalizations. The most important service that can be rendered today to that reform is to demonstrate the erroneous character of these indiscriminate generalizations and substitute for them carefully considered and scientifically accurate statements of principles." What would this journal teach its readers as "scientifically accurate principles?" This is one of them: "It has been asserted that alcohol is never a food and always a poison. This is scientifically erroneous. It is sometimes a food and sometimes a poison." Of course, we see here the echo of Professor Atwater's conclusions and the absurdity of accepting them unconditionally, as being in the nature of a scientific *ex cathedra* dogma, is not less than the absurdity of the opinion which states that alcohol is "sometimes a food and sometimes a poison."

This was nearly two years ago, but the *Outlook* probably still maintains its position both as to the untrustworthiness of the average temperance advocate and the infallibility of Professor Atwater; for a gentleman recently addressed that journal to be informed as to who were the recognized authorities on the subject of alcohol and he was referred to Professor Atwater as "the highest authority."

The mischief which an influential lay journal can do by misinforming its large clientele of intelligent influential lay readers is simply incalculable; for they are unacquainted with the work done by scientific men and do not have access to the literature containing the results of scientific experiments. Too often these are buried in society reports or published in specialized scientific journals which are read by very few scientists and no laymen, and generally they are clothed in the technical language of science, making them unintelligible to the lay reader when he does happen to see them.

The journal just mentioned, however, was not the only influential magazine to support Professor Atwater's vagaries. There were others which disseminated his views, accepting him as an infallible guide. Some medical men occupying places of importance are also his supporters. One of these, writing to the layman seeking for information upon the subject of authorities, mentioned above, declares that Professor Atwater is the highest authority, as his researches are "government publications and standard science today." It is entirely safe to say, however, that had Professor Atwater's experiments been given to the world in the way that scientific men usually give their results, embodied in a society report or in the columns of a

scientific journal, they would have created absolutely no excitement and little interest, the interest which conclusions unwarranted by the evidence upon which they are based naturally arouses.

That Professor Atwater appealed to a prejudiced public through the medium of a lay journal is "significant of much." What motive prompted him to do so is known only to himself. His conduct, however, was unusual; for scientific men almost invariably give the first fruits of their purely scientific labors to their scientific brethren through the columns of appropriate special journals.

What did Professor Atwater have to give to the scientific world as the result of his investigations into the food value of alcohol? Only this, that when alcohol is taken into the body by way of the

stomach, in small quantities, it is almost completely oxidized, and that from two to two and one-half ounces of absolute alcohol may thus be disposed of in twenty-four hours "without apparent damage to the organism." That when thus taken and oxidized it gives rise to bodily energy, resembling

in this respect carbohydrates and fats. For these reasons, therefore, alcohol is a food. Moreover, he has told his interested lay readers that alcohol in certain cases is the only food which can be digested; that it is, therefore, absolutely indispensable for the saving of human life. More than this, he would have those textbooks which now teach our children that alcohol is a poison and not a food so revised as to teach that it is a poison only when taken in large quantities; that "temperance is always advisable. This we may emphasize strongly, but whether we shall teach the necessity or duty of abstinence is another matter."

Professor Atwater is an eminent chemist, and whenever he speaks as a chemist he is entitled

to our respect. He had a good calorimeter carefully constructed under his own supervision. When, therefore, he tells us that fully ninety-eight per cent. of those small quantities of alcohol were oxidized, we feel sure that he knows what he is talking about, for he has demonstrated that point. When, however, he says that from two to two and one-half ounces of alcohol may be ingested every twenty-four hours without doing any harm, he speaks without warrant, for there is nothing in the report of his experiments which shows that he did anything to demonstrate this point. Besides, we have an abundance of evidence from other investigators, notably from Kraepelin and Dr. Herman Frey, which shows that these quantities of alcohol are injurious, markedly so, to both mental and muscular functions.



Derwentwater.

"The light on field and hill is the light of bygone days,
And songs of the dear old times come back in the brooding haze."

There is one fact which Professor Atwater mentions only casually, as if indeed it were a matter of no importance whatever, but which is, as a matter of fact, of sufficient importance to entirely nullify his results, to set at naught his conclusions in toto. The fact is this: Professor Atwater tells

us: "The most of these experiments were made with a man who had been accustomed to the occasional use of alcoholic beverages in moderate amounts." How much was this "moderate amount?" Two or three glasses of whisky, as many bottles of beer, or a quart of wine daily? These are moderate amounts even from the non-user's point of view, but they contain more alcohol than was used in these experiments; and, as is well known by every tyro in medicine, immunity against alcohol as against all other narcotics is quickly established so that intoxicating quantities to the non-user may be taken by the habitue without apparent effect. What would you say of an experimenter who would undertake to demonstrate the physiological action

of morphine with a subject who was in the habit of taking two or three or more grains daily and had been doing it for years?

In detailing his experiments Professor Atwater asks the following question: "Is the energy of alcohol used for warmth and work?" This question he answers affirmatively.

Let us assume that Professor Atwater has not invalidated his experiments by taking as a subject one habituated to the use of alcohol, and we shall see that the evidence adduced by him does not necessarily lead to his conclusions, indeed does not support them. In order to have a greater amount of heat radiated, more fuel must be oxidized, therefore, more oxygen must be at hand to effect the oxidation, and this increased supply of oxygen must come by increasing the respiratory rate; but alcohol does not increase the respiratory rate. When taken in quantities to have a perceptible effect, it decreases the respiratory rate. Moreover, alcohol like all other narcotics temporarily interferes with the oxidation of food material.

To sum up, then, Professor Atwater has produced absolutely no evidence to combat the fact that ingestion of alcohol is followed by an increase of heat radiation. In dealing with the question as to whether the alcohol oxidized in the body is used in the performance of work, Professor Atwater is still more unfortunate. "It is reasonably clear," he says, "that alcohol can supply the body with heat. It seems probable that it also yields energy for muscular work, but to prove this absolutely is not easy. When a man takes beer, brandy or other liquor with his ordinary food, the proteids, fats, sugar, starch, and alcohol are used together for fuel, and we can not say just what is done with the energy of each. It is a case of pooling. If the experiment were made with lean meat and alcohol—that is, a diet containing protein and no other fuel but alcohol—it might perhaps be more decisive, but it would probably be difficult to find a man who could do hard work day after day on such a diet without drawing upon the material of his body."

Let us see what the result would be if we should make alcohol take the place of the carbohydrates and fats of ordinary diet. Atwater's dietary calls for 125 grams of fats and 400 grams of carbohydrates. To supply an isodynamic amount of alcohol for the fats and carbohydrates will require 9.7 ounces of absolute alcohol, or about twenty ounces of strong brandy or whisky. Any one who can see no greater harm in these enormous poisonous quantities than that "*it would probably be difficult to find a man who could do hard work day after day on such a diet without drawing upon the material of his body*" is not a competent physiologist, is not a safe guide, and is assuming too much when he

presumes to speak to the lay public for the medical profession of America.

These are the mistakes of a great chemist when he undertakes to deal with physiological questions, and are sufficient not only to give him absolutely no standing in the court of physiological opinion, but notably to strengthen the hands of those who are trying to make the public see, as the profession sees, that alcohol is not a food but a poison.

It is very difficult to read the two papers published in *Harper's Magazine* and not see that Professor Atwater acts the part of the advocate rather than the part of the unimpassioned, unprejudiced seeker after truth. His second paper is perhaps the strongest plea ever made in America for moderate drinking—strong because the public which does not know is in a frame of mind to believe anything that may be said in favor of alcoholic beverages, and is delighted with the fact that these beliefs are supported by the, to them, highest scientific authority. Surely the acme of power for making mischief is reached when this man, who assumes to be the highest authority on the subject and is accepted by the public at his own estimate, when such authority tells his hearers that, while we may emphasize the fact that temperance is always advisable, "whether or not we shall teach the necessity or duty of abstinence is another question." A wholesale liquor dealer at a recent gathering of men devoted to the interests of whisky, recently earned the deprecation of all men by advising his hearers to teach the growing boy to drink "for that is the only way to make future customers." Put this advice beside Professor Atwater's and find how much they differ.

An expert's knowledge of physiology is not necessary to understand that the wine-making, the brewing, and the distilling interests could ask for nothing better than that our children be taught that to drink "in moderation" is the real temperance, that total abstinence may not be, probably is not, as wise as a moderate use of alcoholic beverages. With such doctrine thoroughly inculcated, customers for alcoholic drinks will be made fast enough to suit the most business-like whisky dealer. Let physicians be untiring in their efforts to show up the falsity of such plausible but pernicious doctrine as that promulgated by Professor Atwater, and let them not confine their efforts to the pages of medical and scientific journals, the readers of which are in little danger of being led astray by scientific sophistry. Let them write for the influential secular journals, striking at every error, bolstered up by pseudo-scientific or assumed scientific authority, just as soon as it shows its head.

Journal of Inebriety.



THE FOOD OF SCHOOL CHILDREN

NAPOLION the Great is said to have lost one of his greatest battles by a fit of indigestion. If the teacher could know the facts it is probable that she would find a poorly cooked or hastily eaten breakfast the cause of many a school failure. Heretofore dullness has been too often a matter of diet, but with the new interest taken in foods and their preparation it is not likely to remain so in future.

In the upper grades of many schools cooking is now taught as thoroughly as any other science and with gratifying results, but bad habits in eating and drinking may still be formed in the earliest years of child life unless the primary teacher solves the problem of their prevention. Tactful suggestion to the parent as opportunity offers may do something to improve matters, but the more hopeful side of the work is with the little ones themselves.

The desire to grow tall and strong, to surpass one's mates on the playground is part of the child's life. We have only to show the relation of food to strength and growth to arouse his interest in these matters and get his cooperation. Suppose the first topic chosen is

(1)

WHY THE CHILD NEEDS TO EAT

Nothing is more fascinating to a child than to watch the construction of a building. Call attention to any house or barn that is going up near by, and ask what materials are being used to build the walls, roof, windows, and other parts. Write their answers in a column on the board, then ask what else could have been used in this building. Tell the story of the Israelites in Egypt who were forced to make bricks every day but were given nothing from which to make them.

Tell the class that we all have buildings to put up, and more important ones than any carpenter can build of wood or brick. We have to live in these houses all our lives and can never move into others if we want to, so it will not do to make mistakes in building them.

Develop this idea further, if necessary, until the class know that you are talking about their bodies. Measure the height of each child at recess, and weigh them all after finding how tall they are. Then for the next lesson in number work help them to find how much they have yet to grow to be as tall and large as their fathers or mothers.

If these houses we have been talking about are to last as long as we live, we must find what they are made of and use only the best materials to build them. We found that a carpenter takes wood and stone and iron and glass when he wants to put up a building. What is needed to build the bodily house of a boy or girl?

As the children name the different substances of which the body is made, bone, muscle, blood and the like, write these answers also on the board opposite the list of house materials.

You are better off than the carpenter when he starts to build a house, because he has to get together all his material while you have something to start with. Compare your arms with your father's. They are just like his only very much smaller and weaker. What do they need to make them grow?

From the various answers which may be given select food as the chief essential, writing it on the board in sentence form:

Every part of the body needs food to make it grow.

If we want to make a stove warm, how do we go to work? Yes, we put in fuel of some kind, wood or coal, and set fire to it. In much the same way the body is made warm by the food we put into it.

Bring out the difference between food and clothing in this respect, making it clear to the children that clothing is worn to keep the body from losing its heat, not to give it heat in the first place as food does. Write this second use for food on the board when it is clearly understood:

Every part of the body needs food to give it warmth.

If any child in the room has on a new dress call attention to it, and ask why one can not wear the same clothes year after year. What do our mothers do to our clothes when we tear holes in them?

Ask why holes do not come in our bodies as well as in our clothes, since they get even harder usage. Thus develop the additional thought that

Every part of the body needs food to keep it in repair.

Compare our need of food with that of plants and animals, helping the class to find whether these need it for the same reasons that we do. What does the plant need to make it grow, for instance? Do any of its parts wear out and need repair? What does food do for our pets?

THE BEST FOODS FOR CHILDREN

Ask the children what they like best to eat. Write each substance on the board as named and discuss it with the class, explaining why it is good or unwholesome as the case may be. Group together the most common foods which build and repair nerve and muscle, and those which give heat to the body and strength for work and play. Meat, eggs, fish, and milk will belong largely in the first class, and potatoes, oatmeal, bread, butter and cake largely in the second.

Show why substances from each of these classes are needed for every meal. Then let the children tell what foods they think would be suitable for breakfast, dinner, and supper. Get their own reasons for such choice which will often be correct. When mistakes are made explain why their choice would not be advisable.

Be especially careful that all foods commonly found in your locality are named, and that the class learn which are wholesome and which are not.

Talk over with the children the foods which are suited to the time of year, leading them to see why fruits and vegetables are especially needed in summer, and what foods are best suited for use in cold weather.

Many hints can be dropped as to the best ways of cooking common foods, if care is taken that the children carry home these suggestions as their own rather than as the dictum of the teacher.

SOME THINGS WHICH CHILDREN SHOULD NOT EAT

Lead the children to see for themselves, as far as possible, what substances should be eaten in moderation and what should be avoided entirely. Suggestions of this kind can often be made best in story form. The candy question is one of the most vital to children, hence this is selected for illustration in the story of

A SPOILED BIRTHDAY

The twins were having a birthday and grandpa had given them each fifty cents.

"I'm going to buy a little iron for my dolly's clothes," said Lois.

"So am I," said Nelle, and pretty soon both children were perched on chairs in Granny Cole's little shop looking at the many toys she had to show.

Here were the little irons sure enough, and everything else that children like, dolls, tea-sets, tiny horses and wagons, tops, balls, trumpets, marbles.

Best of all, the children thought, was the gay red and white candy in the tall glass jars on the counter.

"I think I'll buy candy with my fifty cents," said Lois, after long thought on the subject. We don't need but one flat-iron and I can use yours."

Nelle tried an iron on the ruffle of her cape. It was just what she wanted but—she liked candy as well as Lois, and mamma never gave them all they wanted.

Before long she decided on candy too, and when they started home they had two large packages of sweets but no flat-iron.

At dinner time two very forlorn little girls appeared. Mamma had prepared a delicious birthday dinner, but they had eaten so much candy they had no appetite for steak, baked potato, peaches and cream.

They didn't feel like play all the afternoon, there was no more candy to eat, and they had spent all their money. It was not a nice birthday at all.

"Next year we'll buy something else besides candy," said Lois and Nelle."

Let the children form their own conclusions why the twins did not enjoy their birthday and why they had no appetite for dinner. Do not give the idea that candy is always harmful. Tell them instead when to eat it, and how much at a time. Show why the stomach needs rest as much as any other part of the body, and that it can not get it if candy is eaten between meals. Explain why home made candy is safest. If brandy drops are ever sold in your vicinity explain the danger in their use.

After the candy question is disposed of, take up other errors in diet in a similar way, choosing those most common in your own neighborhood.

Find how many pupils in this grade drink tea or coffee, and show why both are harmful to children.

A good way to explain why grown people may eat and drink some things which children should not, is to show how they differ in other respects. Children can not work so hard as their father and mothers, they can not endure so much, and no parts of their bodies are so strong. Show how unfair it is, then, to their digestive organs to make these try to digest the same kinds of foods that older people eat.

Lead the class to compare the food of little chickens with that of grown fowls. Why would we not feed whole corn to the former? Name pickles, doughnuts, pastries, and highly seasoned

foods of all kinds as similarly unsuited to the stomach of a child.

Children of foreign born parents are frequently given beer with their food under the mistaken notion that it is nutritious as well as cheap. Combat this idea by definite instruction showing that few of the good qualities of the grain from which it is made remain in beer and that these few are more than offset by the harm it does the young growing body of the child, to say nothing of its tendency to create an appetite for itself and for stronger liquors.

AUTHORITATIVE QUOTATIONS

ALCOHOL CAN NOT BE REGARDED AS A FOOD OF ANY KIND

The evidence altogether is pretty clear that alcohol can not be regarded as a food of any kind, and it can not, therefore, either strengthen or nourish the body. As a consequence there can be, in the true sense, no such thing as the "nourishing stout" or ale so ingeniously advertised by brewers; and it is also, of course, physically impossible for any wine, red claret or other, to "make blood" as certain imaginative vendors would have us believe.
— CAPTAIN P. H. O'GORMAN, D. H. P., Cantab.

ALCOHOL POSSESSES NO VALUE AS A FOOD

Alcohol possesses no value as a food and can not be regarded as a source of muscular energy.
— J. H. KELLOGG, M. D.

ALCOHOL GIVES NO STRENGTH

I find alcohol to be an agent that gives no strength, that reduces the tone of the blood vessels and heart, that reduces the nervous power, that builds up no tissue, and can be of no use to me or any other animal as a substance for food.—SIR HENRY THOMPSON, M. D.

ALCOHOL NOT A FOOD ECONOMIZER

It is said that alcohol is a food economizer, and that it may supplement in part the insuf-

ficient food of the laboring man. It is not a supplement at all, but as it benumbs, paralyzes the sensation of hunger, it deceives the drinker and makes him think that he has taken enough food.—DR. DE VAUCLEROY, Professor of Hygiene in the Military School of Belgium.

ALCOHOL PREVENTS DIGESTION OF OTHER FOODS

As to alcohol being an indirect material of nutrition it is certainly nothing of the kind, since it prevents the digestion of other foods, hinders the exchange of gases in the tissues, and leads to fatty degeneration.—AUGUST SMITH, M. D.

ALCOHOL AN EXPLOSIVE NOT A FOOD

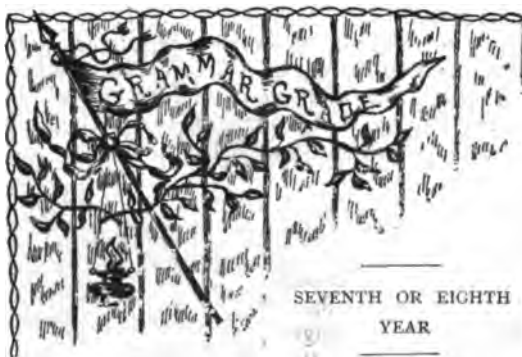
Suppose that a locomotive has to run over a certain number of kilometers; in order to do this it must be given food. This is the coal which it burns slowly and methodically. If in the place of coal we throw naphtha on the fire the combustion of this may furnish as much heat as the coal but it is burnt instantaneously, in the form of an explosion. The heat thus produced is not utilized in the machine. What naphtha is for the locomotive, alcohol is to our bodies; it is an explosive but not a food.
— DR. BIENFAIT of Liege.



"Nellie tried the iron on the ruffle of her cape."

ALCOHOL NOT A FOOD BUT A POISON

No intelligent person would say: "A little arsenic, or a little opium, or a little Indian hemp, or aconite, or atropin, or prussic acid is a nutriment, and is of benefit to man in health, and should be taken daily and regularly; but a little too much is poison." Why, then, suffer ourselves to drink or speak of alcohol? No, alcohol is never a nutriment, nor fit for daily use. Alcohol is a poison, inherently, absolutely, essentially; in a drop or in a gill, in a pint or in a gallon, in all quantities, and in every quantity it is a poison. Plainly the quantity can not alter its chemic constitution.—EDWARD C. MANN, M. D., in *Journal of the American Medical Association*.



THE HARM IN BEER-DRINKING

DURING the Civil War a party was held at General Grant's headquarters, and every officer present drank but one. A few days later this man was placed at the head of the Commissary Department.

"He is given this responsible position because he does not drink," was General Grant's explanation of his choice.

This was in the days when alcoholic liquors were considered a good thing and actually served out to soldiers as part of their rations. Even then, however, it was known that men who drank were unfit to exercise great responsibility. But in the decades since the war the real nature and effects of these substances have been brought to light and given a place in the public school curriculum commensurate with the importance of the subject as it relates to human life and progress.

Every pupil who has his own living to earn knows that he must be able to read and write and compute numbers accurately in order to fill any but the lowest positions after leaving school. The time is fast coming, if not already here, when total abstinence from tobacco and all forms of alcoholic liquors will be equally essential to industrial success. The teacher should be the first to recognize this new spirit of the times, and bring its import home to her pupils in definite instruction.

THE COMPOSITION OF BEER

Before attempting to show the evil effects of beer-drinking, make sure that the class know what beer is made from, and enough of the process to understand its changed character.

Show a drop of stagnant water with its minute forms of animal life as this appears under the microscope. In the same way show the plant ferments as found on ripe grapes and in yeast. After this observation lesson ask the class to find out all they can of the nature and mode of growth of ferments from such text-books as are available. Additional questions for their research may be:

What does the yeast plant need in order to grow?

How does it change the sweet liquid in which it grows?

How is grain used in beer-making?

Why is not beer a good drink if the grains it is made from are good food?

How can there be any alcohol in home-made root beer prepared only from pure roots, bark or herbs, together with sugar, water and yeast?

If the addition of yeast to grain or root juices makes them unfit for food why is not bread made with yeast also injurious?

Discuss the last three questions fully with the class at the end of their research work. They embody the most perplexing points of the lesson and sooner or later every young person must meet them for himself.

Begin by explaining enough of the process of fermentation to show that it always changes the nature of a substance. Give such illustrations as the souring of milk, the decay of fresh meat, the molding of cheese, and call for additional examples from the class.

Compare the products of each of these fermentations with the original substance, asking what change has occurred in appearance, taste and food qualities. Show that similar changes take place when beer is made, so that it no longer looks nor tastes like any of the materials used in its manufacture.

Ask somebody to write on the board the ingredients of which beer is made and opposite these the component parts of beer. What substances appear in the second column which do not in the first? How did they get in the beer? Show that the nutritive element in the first column, the sugar, has been mostly changed by the yeast to alcohol, a poison, and carbon dioxide, a gas. Find what becomes of each of these new substances.

Bring out very clearly the fact that the ferment yeast always changes a part of the sugar in any such sweet liquid to alcohol, hence there will always be alcohol in any root beer or home-made drink to which yeast has been added under proper conditions. Find what these conditions are, and why some drinks contain more alcohol than others.

In comparing bread-making with that of beer, the points to be made clear are first, that much less yeast is used in bread sponge in proportion to the starch or sugar ingredients, thus forming but little alcohol, and second, that this little is vaporized and driven off by the heat of the oven leaving no alcohol in bread that has been well-baked. Find what the function of the carbon dioxide is in raising the bread dough.

EFFECTS OF BEER ON THE BODY

Ask the class why most of the bicycles now on the market give out sooner than those made several years ago. Call attention to the fact that very low prices mean cheap materials and poor work. Why is it that the pyramids have remained unshaken for so many centuries? Call for other instances in which good materials and excellent workmanship have stood the test of time.

What kind of material is the beer-drinker putting into the building of his body? Study with the class the effects of beer on the different bodily organs, noticing its very slight nutritive value as compared with that of any real food, together with the enormous amounts which would be required if it were to be used for this purpose, and then the condition in which it is likely to leave the body of the drinker.

What should be the character of healthy muscle, for instance? What kind of muscles is the chronic beer-drinker likely to have? After one illustration of this kind divide the class into two sections, asking the first to describe the normal conditions of other organs of the body, and the second to show how the use of beer tends to weaken and destroy each instead of building it up. Ample material on these points will be found in the pupils' text-books and in the authoritative quotations at the close of this article.

Inquire why it is that beer-drinkers are considered poor risks in any reputable insurance company, and why slight injuries so often bring about fatal results in their case. Why are surgeons loath to perform operations on such patients? Why do they die from pneumonia and lung diseases more frequently than total abstainers? One often finds an apple fair to look at and apparently sound, but so riddled with worm holes inside as to fall to pieces almost as soon as touched. In what way is this a picture of the chronic beer-drinker. Why is it impossible to build up a sound healthy

body out of such material as beer? All these questions are extremely pertinent, and may well receive full discussion in class.

EFFECTS OF BEER ON MENTAL ABILITY

"There is not a thought in a hogshead of beer; there is not an idea in a whole brewery," said the man who is now President of the United States. Write this emphatic statement on the board. Read it aloud, then ask the class to bring forward all the arguments they can in its support or in contradiction.

What are some of the positions which require keenneis of intellect, and unerring judgment to fill them properly? In how many of these positions is the beer-drinking man wanted? Why not? Have the class find how the alcohol in beer and similar drinks affects the brain and nervous system, learning what these organs of control need to put them in the best possible condition, then whether the necessary constructive materials are to be found in beer, and last of all whether such drinks can actually harm the nervous system as well as fail to build it up.

At a critical moment of his career Napoleon offered two hundred millions for Marshal Ney, and because this able general disappointed him the day was lost. There is hardly a business enterprise today that is not crying out for men of energy and ability to carry it on properly. Where are these men to come from? The frequenters of the saloons and prisons will drop out in a few years, and new drunkards and criminals will take their places. Where will these come from?

Ask your class such questions, leaving them to think out for themselves the inevit-

able answer that both these classes must be recruited from those who are now boys and girls.

At the dictation of the class make a black-board list of different kinds of professional schools, noticing the kinds of work open to the graduates of each. What can the mechanical engineer do, for instance? the landscape gar-



Burne-Jones

Temperance

dener? the journalist? the architect? When all familiar professions have been mentioned, write the saloon in a class by itself, and ask where its graduates are wanted. What kinds of work can they do best? Is it worth while to go to any school whose graduates are less valuable than the beginners? Show how beer-drinking is one of the first lessons in this profession.

Write underneath President Roosevelt's opinion of beer, the word-legacy which Governor Russell left for all young men: "There is one thing better than making a living, and that is making a life." Leave both quotations on the board for a day or two, then ask each one of the class to write a short paper showing how the habit of beer-drinking, if once formed, must necessarily hinder one, both in making a living and in making the most of his life.

AUTHORITATIVE QUOTATIONS

COMPOSITION OF BEER

According to standard analyses, lager beer contains 89.75 per cent. water, .15 per cent. carbonic acid; 5.10 per cent. alcohol, 5 per cent. malt extract.

The malt extract is the only part which can be said to have nutritive value. All that is nourishing in this can be purchased in bread for one-tenth what it costs in beer. The healthy grown person requires daily from 450 to 500 grams of the kind of food represented in this extract. To get this amount from beer one would have to drink eight quarts containing about nine ounces of alcohol. The poisonous effect of such an amount would very quickly show itself.—WINFIELD S. HALL, M. D., Ph. D., Professor of Physiology, Northwestern University.

ALCOHOL IN ROOT BEER

All root beer and drinks where sugar is used contain alcohol when fermented, and the quantity of spirits formed is usually dependent on the sugar used and the age of the liquid.—T. D. CROTHERS, M. D., Editor *Quarterly Journal of Inebriety*.

Of four hundred and twenty five root beers and other temperance beverages which were analyzed, more than half contained over the legal two per cent. of proof spirit, the range extending from a mere trace up to twenty-five per cent. In nineteen of the cases the samples, although represented as non-intoxicating, contained as much spirit as ordinary ale and porter or more. It was stated on the label of a professedly non-alcoholic beverage that total abstainers who consumed it were both pleased and surprised at its comforting and exhilarating effects; and as it contained twenty-three per

cent. of proof spirit the reason was obvious.—JAMES EDMUNDS, M. D., M. R. C. P.

BEER WEAKENS INSTEAD OF STRENGTHENING

The popular idea that beer and other alcoholic drinks are strengthening is a mistake, a delusion, a mere superstition which receives no support from science.—A. MULLEN, M. D.

BEER PRODUCES DEGENERATION OF ALL THE BODILY ORGANS

The use of beer is found to produce a species of degeneration of all the organs; profound and deceptive fatty deposits, diminished circulation, conditions of congestion and perversion of functional activities, local inflammations of both the liver and kidneys are constantly present. Intellectually a stupor, amounting almost to paralysis, arrests the reason, changing all the higher faculties into mere animalism, sensual, selfish, sluggish, varied only with paroxysms of anger that are senseless and brutal. In appearance the beer-drinker may be the picture of health, but in reality he is most incapable of resisting disease. A slight injury, a severe cold, or a shock to the body or mind, will commonly provoke acute disease ending fatally. Compared with inebriates who use different kinds of alcohol, he is more incurable and more generally diseased. The constant use of beer every day gives the system no recuperation, but steadily lowers the vital forces. It is our observation that beer drinking in this country produces the very lowest kind of inebriety, closely allied to criminal insanity.

The most dangerous class of ruffians in our large cities are beer-drinkers. Recourse to beer as a substitute for other forms of alcohol merely increases the danger and fatality.—*Scientific American*.

BEER AS BAD AS WHISKY

It is false to assume that beer is less bad than whisky, and it is, therefore, just as false to favor the importation or production of beer. It is not only alcohol in concentrated but also in much diluted form which acts destructively upon the brain and body. In countries where its consumption has been restricted (Norway), the number of suicides has diminished exceedingly.—F. C. MULLER, M. D.

BEER LEADS TO STRONGER LIQUORS

People who indulge in the habit of drinking beer, or any other of the weaker fermented liquors, are quite likely soon to acquire an appetite for stronger liquors. Indulgence in beer leads to indulgence in whisky and brandy.—W. E. BALDWIN, M. D.

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"Who said November's face was grim?
Who said her voice was harsh and sad?
I heard her sing in wood-paths dim,
I met her on the shore, so glad,
So smiling, I could kiss her feet!
There never was a month so sweet."

"The year lies shrouded upon the autumnal hills;
There, in the sunburnt stacks the beauty sleeps
Of beam and shower, dawn, and silver dew,
Whispers of woody dusk, and upward deeps
Of moonlight when the air is crystal blue.
The bending farmer gathers into heaps
A harvest with the summer woven through."

WRONG IDEAS CORRECTED

UNINFORMED PARENTS

A LADY of intelligence, and living in a cultured community, recently said: "This temperance physiology taught in the schools is doing great harm. The other day when my little daughter saw her father drink a glass of beer, she burst out crying and sobbed out, 'O, papa, don't! don't! One glass may not hurt, but there is *some* alcohol in beer and if you drink it often it may make you want more and more and that is the way a drunkard is made.'"

If this mother had herself better understood the nature of beer, had she known what the children of this country are now learning in school, that the alcohol in beer has the power to create an uncontrollable desire for more alcohol, a desire that if gratified destroys the drinker, she would not only have sympathized with her child's anxiety but would have been grateful that the rising generation are being warned against the first steps that in the past have led to ruin. New truth that rebukes popular habits always calls out the opposition of the uninformed, but that must not stop our teaching that truth.

To an Illinois teacher who said, "It is no use teaching physiology in this community, the habits of parents contradict its lessons," the superintendent of her school replied, "What is that to you? Your duty is to teach the facts. This generation of parents may not receive

them, the next will be more tolerant, the third will be wholly converted. You have no right to expect the teaching of one term to overcome in the parents of your pupils the habits and thoughts that date back for generations."

That superintendent was what the true teacher always should be, a philosopher.

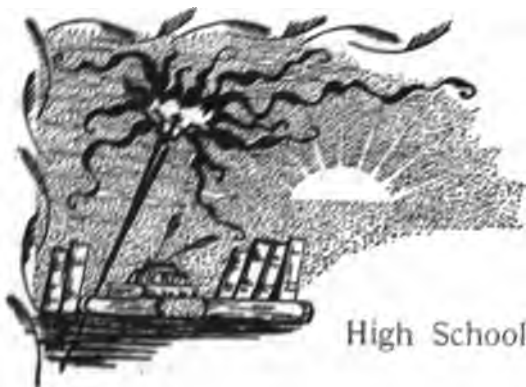
TEMPERANCE PHYSIOLOGY AND THE INTELLECT

Another objector who should be better informed says, "The object of the public school is to educate the intellect, not to teach temperance physiology." We reply that so to educate the intellect and other faculties of the rising generations as to make good citizens is the object of our free public schools. Teaching temperance physiology is educating the intellect while it makes good citizens. The intellect is defined as the faculty that takes cognizance, that understands, that conceives the truth about things, that forms judgments and that reasons. Education has been well defined as the introduction of the individual to the world of things and ideas around him. This introduction or education is secured by training the intellect and other faculties to take cognizance of, to conceive and understand the truth about the things and ideas that constitute our environment in this world, to reason and form judgments about them.

There is one environment that no one can escape, an environment that is common to every human being and will be as long as he remains in this world, and that is his own body. The body is the instrument through which the intellect expresses itself.

The power of the intellect not only depends upon the strength and ability of its instrument, the body, to carry out its demands, but it is itself weakened by the weakness of its instrument, the body. Consequently, success or failure in life, comfort and happiness or discomfort and distress depend upon the conditions of the body, or upon what we call its health. These conditions are largely the result of obedience to the laws of health, and one must know these laws in order to obey them.

It is therefore self-evident that a knowledge of the laws of health of this constant environment, the body, and of what is necessary to maintain its best conditions, and of the nature and effects of substances that are eaten and drunk for that maintenance, in other words a knowledge of temperance physiology, is an essential part of the education of the intellect as well as that of all the other faculties. Nor can a person be said to have full education of the intellect who has no knowledge of physiology which includes with other hygiene the story of the nature and effects of alcoholic drinks and other narcotics.



THE COMPOSITION OF THE BODY

THE would-be knight of the Middle Ages had sometimes to forge weapons from such material as he could find before entering the lists with other heroes. Today, swords and metal armor are out of fashion, but every youth must still address himself to the task of providing his own equipment for the battle of life, and one of the indispensable weapons in the contest is a healthy body.

This may be inherited, in large measure, from a long line of worthy ancestors, but even so the gift must be confirmed by individual right living in order to be retained. On the other hand, young people who inherit ill health may outgrow this tendency and achieve for themselves what heredity has denied them.

The first requisite to the proper care of the body is a knowledge of its composition, structure, and needs. This has already been gained in some degree from the physiology work of the grammar grades, but high school pupils are prepared to consider the subject from a more advanced point of view. A good microscope will be necessary and should be borrowed for this work in cases where it is not owned by the school.

Ask the pupils to prepare and bring into class a slice of bone, cut horizontally and as thin as possible, shreds of muscle and fat, and cross sections of any animal organs which can be obtained at home or at the butcher's.

Call attention to the fact that no two of these parts look alike when seen by the naked eye, but that the microscope shows that all have had the same beginning, a single cell, the only essential difference being in the shape and grouping of the countless numbers of such cells which go to make up each organ.

Show slices of potato or watermelon under the microscope, that the class may see that the cell is also the basis of vegetable life. Have them consult dictionaries, physiologies, and all reference books at hand which bear on the subject in order to know just what is meant by

the term cell. Ask different ones to find what a cell consists of, its most important part, the different shapes it can assume, how it grows, and its chief characteristics.

In the human body cells group themselves into colonies called tissues. Why is this? Find how these groups of cells are fastened together to form tissue, and why all cells do not have the same shape. Have the different parts of the body pointed out from a chart and classified by name, as bone tissue, muscular tissue, and the like. Compare the work done by the body tissues with that done by different people in a community. Show how, in both cases, a division of labor is more economical as well as productive of better work.

After a general idea of cells and tissues has been obtained, assign the following special topics in review on this subject:

The single cell: its composition, structure, variations, properties, mode of growth, work.

The tissue or colony of cells: its relation to the single cell, its variations in structure, its properties, and work, its relation to the body.

The organ or collection of tissues: its relation to tissue and to cells, a comparison of the various organs of the body as to appearance, structure, function.

A comparison of plant and animal life in respect to cells, tissues, and organs.

Study under the microscope the effect of various substances on such a living cell as the yeast plant. Find what happens when such a cell is bathed in water, or a proper food substance, then in tea, coffee, or any alcoholic liquor. Study the effect of exercise and sleep on cells, and show how their condition decides the health or weakness of the whole body. Determine from these experiments and from the study of text-books what cells need in order to attain the highest degree of growth and efficiency, and also what will hinder their development.

Instead of feeding the cells of the body, what is the real effect of alcohol? Find what effect alcohol has upon the blood cells when it has been absorbed into the circulation, then upon the brain, nerve and muscle cells of the body. Show how its action on cells and tissues must inevitably extend to the individual, weakening physical and mental power and lowering moral sense.

Throughout the entire lesson keep before the class the thought that the life of the cell depends upon its power to grow. When it stops growing it dies. Whatever, then, hinders cell growth inevitably shortens its life: whatever fosters its growth adds to the life of the cells.

and increases the health and working power of the individual.

AUTHORITATIVE QUOTATIONS

HEALTH DEPENDS UPON PERFECTION OF CELLS

The body is an aggregation of cells. Each cell consists of protoplasm, granular in character. These cells differ in form and function. Cells reproduce themselves, assimilate, grow and have sensibility, that is, respond to stimulus. Perfect health depends upon the perfection of growth and function of these cells. Anything that interferes with their nutrition, activity, or growth seriously interferes with the welfare of the body.—A. D. McCONACHIE, M. D.

ALCOHOL AFFECTS THE ENTIRE SYSTEM THROUGH PROTOPLASM

Experiments indicate that alcohol, even in very small quantities, affects protoplasm, and therefore the entire system. The general effect is to inhibit the vital phenomena inherent in protoplasm, hindering thereby the resist-

ance of the body to infectious diseases, while the multiplication of the various bacilli in the presence of even minute quantities of alcohol would seem to indicate that life and growth of destructive elements are promoted.—NORMAN KERR, M. D., F. L. S., in *Journal of Inebriety*.

ALCOHOL CAUSES CELL STARVATION

Dr. Van Gieson of the New York State Pathological Institute has pointed out the action of alcohol on the cells as erosive, breaking up the normal relation of the granular or protoplasmic matter. This is cell disturbance and cell starvation. The function is changed and its nourishment lessened.—*Journal American Medical Association*.

When alcohol is absorbed into the circulation

the walls of the cells enclosing the germinal matter are dissolved, the albumin not in combination is coagulated, and the red blood globules are deprived of a part of their contents which mingle with the liquor sanguinis, leaving them shrunken and wrinkled.—W. F. WILKINS, M. D., in *New York Medical Journal*.

ALCOHOL CAUSES DEGENERATION OF NERVE CELLS

Alcohol causes degeneration of nerve, muscle, and epithelial cells.—G. SIMS WOODHEAD, M. D.

ALCOHOL LESSENS ABSORPTION OF OXYGEN

Alcohol lessens the absorption of oxygen by the red blood cells, and diminishes the elimination of carbon dioxide. It has a degenerative action on nerve fibres and cells. This has been especially noted in their peripheral terminations.

There seems to be a swelling due to infiltration with leucocytes and fatty granules, then a thickening and inflammation followed by degeneration and wasting of nerve and muscle fibres.—A. D. McCONACHIE, M. D.



"The birchen bough
Drops its bright spoils like arrowheads of gold."

ALCOHOL TAKES AWAY RESISTING POWER TO DISEASE

Alcohol even in small quantities affects protoplasm, diminishing the vital phenomena therein, and takes away the resisting power to disease.—T. D. CROTHERS, M. D., in *Journal American Medical Association*.

THE GROWTH OF YEAST

Yeast is able to grow until, by decomposition of sugar, its medium comes to contain fourteen per cent. of common alcohol. At this point, no matter how much sugar and other nutriment remain, further growth is impossible. Flügge states that growth is slowed with twelve per cent. of alcohol and stopped at fourteen per cent.—C. F. HODGE, Ph. D., Clark University.

CHILDREN OF MANY COUNTRIES

III. INDIA

WHAT a strange sight and what a clatter of tongues is here! Boys are sitting Turk fashion on a platform at the entrance of a house, swaying backward and forward, and making a strange, high, shrill noise. Opposite them sits an oddly dressed man with a stick in his hand. Who are they and what are they doing? Look a little closer. Some of them have books in their hands, and others something that looks like a slate. Yes, it is a school, and the boys are the boys of India.

How would you like to begin school at six o'clock in the morning? That is the time at which this one commences. At eight the boys go home for their breakfast, then from ten until two o'clock, and again from three until dark they are busy with their lessons shouting them aloud as they learn them, for if a boy lowers his voice his teacher thinks him idle and is apt to rap him with his long stick. They learn the letters of their alphabet by writing them with their fingers or with sticks in the sand. When more advanced they have wooden slates on which they write with chalk or with a reed and ink made of white lead.

They study some of the same subjects that you do, the multiplication tables for one thing, and these they can repeat up to a very high number, but if their teachers should begin to "skip about" in the tables as yours do sometimes, these boys would probably not be able to answer so quickly and accurately as you do. Besides writing and arithmetic the boys learn by heart passages from their sacred books. Some of their ideas in geography are very strange to us. For example, they believe that in all the earth there are seven island continents in the midst of seas of salt water, fresh water, clarified butter, sugar-cane juice, sour curds, and milk. These continents rest on a thousand-headed snake whose yawn causes earthquakes. Some say that the snake rests on a tortoise and this on eight elephants.

When the lessons of the day are all learned in a school in India the boys stand up in line before their teacher and holding their hands on their hearts repeat their tables and sacred hymns. The teacher names over a number of duties to be done at home and to each they shout "Yes." Then after prostrating themselves before the teacher as a sign of respect, they all go home.

Have you noticed that there are no girls in this school? The life of a girl in India is far from a happy one and she is shut off from many of the pleasures and advantages of her brothers. Some of the missionaries are allowed now to

teach the girls but it used to be thought that if a girl were given any education she would surely become a widow, and that, as we shall see, would be a most unhappy fate. So if she were taught anything at all it was but little, and just as she began to be interested she had to stop to be married. Most parents in India think that their daughters must be married by the time they are fourteen years old at the very latest, indeed if a girl is unmarried at ten her family feels quite disgraced. Often girls are married at four or five and sometimes in their very first year. "The children think it is great fun to be married, for at the time of the wedding they have so many pretty clothes and jewels and plenty of good things to eat and a merry time. The ceremonies are very elaborate and costly and last for a number of days." The bridegroom sets out with a gorgeous procession for his bride. There are fireworks, and music and gifts. Often the father of the bride scatters money among the people in the street. It is said that sometimes rich men think it necessary to throw away two or three hundred thousand dollars in this way, and there are always plenty of people ready to pick the money up.

"If married when very young the girls stay at home for a few years with their mothers and learn to bake bread, cook rice and curry, polish the brass dishes and sew a little. These are happy days for them, but by and by when they go to their husbands' homes, they have to settle down into very demure little women. They must never look up or speak until they are spoken to, or laugh or play, but do their work quietly." Should the husband die, even before the little wife leaves her father's house, the child-widow, who may be not more than three years old, for the rest of her life must have her head shaved, her pretty clothes and jewels are taken from her, and instead she must wear coarse clothes. She may not touch others nor go out to festivals with them, for they think her unclean and that her husband's death was caused by some sin of hers.

But the lives of the children of India are not all sad, although they are said to be a quiet, sober little people. Like children in other lands they have their toys and games and amusements. Is there a boy in all the world who does not like to play ball? The boys in India are certainly not the ones, for they play not only handball but a kind of football. Then they have a game called *pata*, a mock battle with short swords which looks rather dangerous to our eyes. There are square kites without tails, bows and arrows, and marbles and tops, while puss-in-the-corner, hide-and-seek, and blind man's buff are as much fun for them as for you.

There are queer shaped toys too, elephants and tigers and horses made out of silver and ivory for rich children, and of pewter and wood for the poor. The girls have their dolls, gaily colored little images with their dresses and ornaments painted on. Wouldn't you think half the fun of doll-playing were gone if you could not dress and undress your dolls and make pretty garments for them? But the only thing that comes off a doll in India is its head, and it must be rather a grim pleasure to try to amuse one's self by taking that off and putting it on. No wonder the girls greatly delight in English and American dolls with their fair hair and faces, and blue and brown eyes that perhaps open and shut.

The children in India have at least one form of amusement that you do not, the jugglers, magicians, and snake charmers who are famous the world over for the wonderful and curious things they do, and who may be seen almost any time in the streets. Sometimes the juggler plants a seed before

the eyes of his audience who are standing around him. He throws a cloth over the spot where the seed is planted. Soon the cloth is taken off and a tiny plant is seen growing up which, in a few minutes, blossoms and bears fruit which the juggler picks off and hands around to show that it is real. The snake charmers carry poisonous snakes around with them in flat baskets. As the men play on their flutes the snakes, charmed by the music, gradually raise themselves and sway to and fro with a curious motion like dancing.

One of the great occasions of the year for the children of India is the festival season when they attend the fairs which are held near some sacred river. It is like a great picnic lasting a week or ten days. All is excitement at home in making preparations for going, and then some bright morning they all start off, the more well-to-do families on an elephant with his gay

trappings, the poorest people on foot, and others in their ox carts. These ox carts are large covered wagons with heavy wooden wheels which it is said are never greased. The oxen, too, are unlike ours as they have a large fleshy hump between their shoulders.

When the children reach the fair they find thousands of people and for a few days they have no end of fun. Perhaps they do not like very well the plunge they have to take in the cold water of the sacred river every morning, but it is soon over, as is also the bow which they have to make before some of the idol images, and then they may run about as much as they please looking at the gay things offered for sale, the ornaments with which the people of India love to deck themselves, the silks,

embroideries, fine muslins and toys. Perhaps they swing in gaily painted red and gold cars, or ride in merry-go-rounds drawn by a camel or an elephant.

To your eyes I fancy the homes of the children of India would look rather strange, and

you would miss many articles of furniture which you would not know how to do without. Can you think how queer it would be to have no chairs, but always to sit on cushions on the floor, or perhaps on the floor itself? A table a few inches high is brought in when wanted. The beds, too, are merely a frame a foot or so high with no springs or head or foot boards, but with a bottom of broad tapes laced across. The covers in rich homes are of silk or velvet. In the homes of poor people there are often no beds or tables at all. A mat woven of palm leaves spread on the floor at night and rolled up by day answers for a bed, and plantain leaves on the floor serve the purpose of table, tablecloth and dishes.

While some of the children in India in the large cities live in fine houses with rich furnishings, by far the largest number live in villages. Each village contains from two hundred to five



"The little bridegroom sets out for his bride."

hundred acres of land with fifty or sixty small houses surrounded by cocoanut and tamarind trees. The houses are built with mud walls and roofs of bamboo poles covered with thatch. It is said that these villages never increase in size, but when one has reached more than the usual number of families some move and start a new village.

Indian children and their parents are very fond of bright clothes and the streets are often gay with every color of the rainbow, while the more jewelry and ornaments they can put on the better they are pleased. Indeed, many children are not troubled with much clothing anyway, and wear little but their ornaments. It is no unusual thing for a child to be robbed in the street or to be stolen for the sake of the jewels or ornaments he wears.

Imagine a girl of fourteen in a crimson silk robe having a gold border two feet deep, an orange and crimson bodice over her shoulders tied in a knot in front, a small headdress of rubies, earrings of pearls, and diamonds about her neck, bracelets and anklets of gold or silver. Quite likely she will have a nose ring large enough to go around her neck thrust through one nostril, and if it is very large it may be held in place by a string or wire attached to the ear.

The poorer women and girls wear one piece of cloth several yards long which they arrange so that it falls about them in graceful folds, while one end of it serves as a bonnet or veil.

The boys and men almost always wear huge turbans made of such materials as the wearer can afford. These turbans often contain enough cloth for an entire American costume.

It has been said that India is a country where babies never cry. Whether this is true or not, the children there in spite of their fun and play are a sober little people. Perhaps this is caused by the sadness which comes into many of their lives through the child marriages; perhaps it is also due to the great poverty of millions of the people which only recently has caused death and famine over large portions of the country. But we may hope that as the years go by some of the old customs which make India an interesting country to foreigners, but which sadden the lives of the people and especially of the children may be changed as the people learn of the better ways of a Christian civilization.

SUGGESTIONS FOR THE TEACHER

Have the children trace on their maps the route from their homes to India.

Have them find out about the different peoples in India, where they came from and when, their characteristics (The Hindus, Mohammedans, Parsees, Todas, Gypsies).

The buildings of India, e.g. the Taj Mahal, The Great Mosque of Delhi, The Iron Pillar of Delhi.

The animals of India.

Caste relations (Brahmins, Soldiers, Tradesmen, Laborers, Pariahs).

Material for these topics may be found in the following:

Boy Travellers in Ceylon and India: Knox.

Strange Peoples: Frederick Starr.

Little People of Asia: Miller.

BOOK NOTICES

TEMPERANCE SCIENCE LESSONS, Nos. 1 and 2, by W. N. Edwards, F. C. S. Price 12 cents each. No. 3, by W. Chandos Wilson. Price, 8 cents. S. W. Partridge & Co., 9 Paternoster Row, London.

These little volumes are admirably adapted to aid the teacher in temperance physiology. The first contains 112 simple experiments with many illustrations, showing the process of fermentation, the nature of the more common alcoholic beverages, and the composition of air and water. Number 2 is a brief exposition of the effects of alcohol upon the various organs and functions of the body, and number 3 sets forth the practical reasons for total abstinence.

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Tommy—"I don't know, pa."

Father—"I should think you would know. When all the others are industriously studying or writing their lessons, who is it who sits idly in his seat and watches the rest, instead of working himself?"

Tommy—"The teacher."

—*Journal of Education.*

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School Physiology Journal

Vol. XI

BOSTON, DECEMBER, 1901.

No. 4



Fra Angelico

"The earth has grown old with its burden of care,
But at Christmas it always is young;
And its soul full of music breaks forth on the air,
When the song of the angels is sung."

THE RELATION OF SCIENTIFIC TEMPERANCE INSTRUCTION TO TWENTIETH CENTURY PROBLEMS*

THESE are designated as the days of "earth hunger" among the nations. In a spirit of rivalry the great powers are scanning each other's assets in population, producing ability, possessions, resources, strength and consequent power. A magazine writer of one country in estimating the outlook for another great nation recently said that its future depends, among other things, "upon its strenuously seeking to remove the national curse of drunkenness." This is one of many incidents that might be cited to show that the world today is recognizing as never before that alcoholism is a menace to national welfare, a menace that must be taken into account in estimating a nation's power. How it can be removed is a world question. We answer, education is the solution of twentieth century problems and

SCIENTIFIC TEMPERANCE INSTRUCTION IS THE SOLUTION OF THE ALCOHOL PROBLEM

We in the United States have always taken education seriously. We believe the people can be trusted if they know the facts, and that

it is the duty of the state so to educate all its people that they will be prepared for intelligent action upon subjects that touch individual and national well being. We depend upon such education for the perpetuity of our government of popular sovereignty, therefore we have referred this alcohol question to our public schools. Through the action of the National Congress and of the legislatures of every state in the Union but one, the scientific facts as to the laws of health, together with the nature and effects of alcoholic drinks, are a mandatory study for all pupils in all public schools in almost this entire country. There are fully 16,000,000 children of school age under these laws. A great school literature, fully abreast with the teachings of modern science on this subject is in the hands of our public school children. This special educating process has been going on with more or less thoroughness in some of the older states for from ten to fifteen years.

WHAT ARE THE RESULTS

This is a serious question, for if we can point to no good results from the study of scientific temperance that fact would tend to show that the people can not be trusted to decide aright even when they know the facts, and would reveal a very weak place in the corner stone of our government of the people. In other words, it would prove that even after receiving a scientific education the people are not capable of self government on the alcohol question. Happily we can point to results that will lead no one to fear for the republic from this cause.

The twelfth census shows that during the decade in which this study has been universally a mandatory study in this country there has been

A GAIN OF FOUR AND ONE-HALF YEARS IN THE AVERAGE LENGTH OF LIFE

Evidently a better knowledge of the laws of health including those relating to alcohol have brought better obedience to these laws and in consequence an increased length of life. This is confirmed by the testimony of physicians as to the increase in knowledge and observance of sanitary laws which they admit the study of temperance physiology in the public schools has helped to secure.

Nations are ranked today according to their producing ability. The civilized world just now is searching with anxiety, if not with jealousy for the cause of

*From an address given before the National W. O. T. U. Convention at Fort Worth, Tex., Nov. 16, 1901

AMERICA'S COMMERCIAL SUPREMACY IN THE MARKETS OF THE WORLD

How she can pay more for labor and still undersell other nations is the burning question of the hour, and the universal answer is that in addition to national resources one great cause is the superior producing ability of the American workman, due to the fact that he does not drink as do the English, French, and Germans in the old countries. The railroads of the United States almost universally demand total abstinence of their employees whether on or off duty. A large per cent. of the employers of skilled and unskilled labor refuse employment to drinkers. Such demands, recently resented in Germany, are cordially acquiesced in by the American workman because he as well as his employer has often learned from his children in the public schools that alcohol injures working ability so much that drink is as bad for the workman's interests as it is for the employer's. As a result, the American, whether as an employer or workman, is making more money than the more bibulous in other lands, and the country is being enriched by this particular application of the scientific truths concerning alcohol that the schools are inculcating.

At the time of the Centennial Exposition in Philadelphia, in 1876, twenty-five years ago, Great Britain stood first in the commerce of the world, France second, Germany third, and the United States fourth. During the last decade the United States by leaps and bounds has reached the first place in the commerce of the world. Germany now stands second, England third, and France fourth. Competent observers freely admit that the development of the vast resources of our country which has made us the richest nation in the world has depended upon what has been termed "the nimble American brain and the greater sobriety of the American workman" which has followed the teaching of scientific temperance physiology in the schools. Thus we who are working for this cause may justly feel that our labors are not only helping to save the children but are also adding to the power, wealth and well being of our nation.

INFLUENCE OUTSIDE THE SCHOOLS

Aside from the benefits of public school education in scientific temperance to the business interests of the country, there are numberless individual instances reported in which children have influenced their parents to give up the use of alcohol and tobacco. The sentiment against alcohol throughout the country as a whole is on the upward trend in spite of tremendous efforts to prevent it. The passage of the anti-canteen law in response to the overwhelming demands

of public sentiment is another evidence in point. The strong scientific testimony against beer with which Congress was flooded while the question was being discussed was powerfully influential in the final vote which abolished beer from the government post exchanges.

SCIENTIFIC KNOWLEDGE ESSENTIAL

Some one has said that forty years ago it did not matter whether one was scientific or not. Today it matters everything, and nowhere is scientific knowledge more essential than with those who attempt to speak authoritatively on the alcohol question.

When the first temperance physiologies were prepared for the schools, seventeen years ago, almost no original investigation had been made in this subject and but little study had been given to the few investigations which had been made. Even as late as 1899, when Dr. Forel visited this country, he says he found among men of official science "a great ignorance of the alcohol question. A scientific alcohol movement," he asserts, "is almost entirely lacking in American Universities."

This condition so clearly described by Dr. Forel explains the false charge that the indorsed temperance physiologies are inaccurate. The truths the books contain are new to many men of official science in this country who do not know that they are true.

This condition, however, is only temporary. The American mind is too alert to be unobservant of the truth when it is presented, and the last two years have witnessed the general promulgation of many new truths called out to correct the false conclusions of the Atwater experiments.

It is possible that even knowledge of these truths as revealed by science will not overcome the appetites and prejudice of some of the older members of the profession, but this is not the case with younger men. They are more open to conviction and they do not share the pro-alcohol views of many of their elders. As one of the most prominent of the younger physicians recently remarked: "With the older men it is a matter of prejudice; with the young men it is a matter of demonstration."

OPPOSITION OF THE BREWERS

The report of the Brewers' Board of Trustees, to the annual meeting of the Brewers' Congress last June, says that scarcely 20 per cent. of the combinations of brewers that have combined for lack of support have paid any dividends whatever, that one hundred and sixty-seven breweries were closed during the past year and eighty-seven more were in the hands of receivers. To these statements is added the exhortation:

"Every brewer and every organized body of brewers must constantly be on the alert, ever ready to enlist new friends . . . and to impress upon the minds of his neighbors the crying need of defending the brewing interest."

In view of this we need not be surprised at the opposition of this class to legislation for the study of scientific temperance by all pupils in all schools. The brewers know that their profits and legal supporters are dying with old customers, and that their business will be ruined unless they can engraft the habit upon the coming generation, the children. Hence they always oppose this education for the primary and intermediate grades of schools. The majorities, which are the law-making power of the future, are in these grades.

We must not be beguiled by any sophistical plea that in order to pacify and "get together" we should consent to this instruction being taken out of the lower grades. To do so would be to consent to the sale of the children to the drunkard's future.

It is estimated that there are one million

men in the employment of our railroads most of whom are total abstainers when on or off duty, and that there are two millions more in other employments who would lose their positions if they drank alcoholic liquors. It is also estimated that the anti-canteen law will cost the brewers the annual loss of the sale of \$2,000,000 worth of beer that otherwise would be besotting our soldiers.

All this means great gain for total abstinence, but it is offset by the fact that the close of the last fiscal year showed that nearly one-half a million people (487,918) came from other lands to our magnetic shores, an increase of more than 100,000 over the preceding year.

These, bringing old world customs with them, will materially increase the consumption of alcohol in this country. We are practically import-

ing beer and liquor drinkers, and are likely to do so more and more. The increasing business prosperity of our country is a world wide invitation to the less fortunate. Thus sections of the liquor problem of all nations are being thrust upon us. But let us not be discouraged. God is in this movement. Let us be thankful that he considers us worthy to be intrusted with such a noble mission.

WORK OF THE SCHOOLS

Our public schools are the only institutions through which we can teach these foreign born people God's law of total abstinence, and we must teach it to them in the primary grades of our schools, where most of these millions can be reached, or they will swamp us in the quagmires of old world alcoholism.



"Carol, oh carol! Christmas is here, gladdest of birthdays in all the year.
Sing little children, glad echoes wake! Celebrate Christmas for Christ's dear sake."

Twenty years ago we said, The star of hope of the temperance reform stands over the school-house. That was prophecy. It is shining there still with heightened refulgence, and by its light and that of experience we see that the school board, su-

perintendent or school officer who fails to provide for the best enforcement of the temperance education laws is false to the business interests of his community and nation, because success in all legitimate business depends upon intelligent total abstinence; false also to the future of the children, and to every body and every thing but to the brewers and distillers and their death-dealing gains.

For the loyal, untiring worker in this cause there is waiting an approving welcome that will echo again and again from the walls of the Celestial City as the great host whom no man can number takes up the refrain, "'Well done, good and faithful servant!' Thou hast been a succorer of many from earth's greatest temptation."

MARY H. HUNT.



DEVELOPMENT OF THE ARMS

A PRACTICAL education ought to give just the things needed for use in after life if these needs could be definitely known. But they can not always be anticipated. New tastes and tendencies are constantly developing in the child, and the adult is quite as likely as not to engage in some business undreamed of in his earlier years.

The most we can do, then, to prepare our pupils for the unknown future is to train body and mind so broadly and generously as to further whatever specific plans may afterwards be laid. The youth who has learned to think quickly and accurately has a good start in life whether he becomes a motorman or a specialist in mathematics. The boy who has made his body lithe and supple by constant exercise can cash this capital in any line of work requiring physical dexterity.

The sooner such training begins, if adapted to the child's needs, the better. During the first year of school life, if not before, he should learn what the different parts of his body are for, and be given regular exercises to further the development of each. The present lesson offers suggestions for work of this kind on the arms.

(1)

WHAT THE ARMS ARE FOR

Put your hands behind you and play that you have no arms. What are some of the things we could not do if we did not have these two little helpers?

Ask the children to mention the games they like best to play. Which of these would we have to give up if we had no arms? How could we eat our dinners, or dress ourselves without these parts of the body?

Show that we would have to get along also without stoves or chairs or tables, and that we would have no houses to live in if nobody had any arms with which to make these things. There would be no books to read. Nobody could play the piano, nor would there be any pianos for people to play on.

How many of you are glad that people do have arms and can use them? What have we done with ours today?

Write the best of the children's answers to these questions on the board, choosing for special mention those in which the arms have been used to help other people.

Suppose we were little birds instead of children. We would have to get along without arms then. What would we have instead? What does the robin do with his wings?

I hear a horse trotting along the road. He has neither wings nor arms. What does he have to take their place? What can he do with his strong fore limbs?

Who has been to the seashore and tried to swim? What parts of your body did you use? Way out in the ocean are big fish that can swim faster than a ship can sail, but not one of them has arms to swim with. How do they manage?

(2)

PARTS OF THE ARM

Hold up a straight stick about as long as the arm. A base-ball bat will answer. Are our arms made like this piece of wood? How are they different? Which will not bend? Which is hard all the way through? Find where the arm can bend. How many such places are there in each arm? Point to each.

Give the name, joints, to the bends in the arm, if the children do not already know this, and help them to name the parts of the arm separated by each joint, the upper arm, elbow, fore arm, wrist, hand, fingers.

If your school is so fortunate as to have a pet cat, bring her into class at this point. Kitty has no arms but she has something which takes their place. What is it? Compare her fore limbs with our arms. Find the part which corresponds to the upper arm, to the wrist, the elbow, the hand, the fingers, the forearm. How many toes has kitty on her fore paws? on her hind paws?

Ask the children to notice the fore limbs of all the animals they see and find how they are like or unlike their own arms. Put a drawing on the board of a bird with spread wings, and another of a fish. Have the children point out in each the parts which correspond to the parts of the arm. Notice the different ways in which the fore limbs of animals end. How many ways can you find? Why do they not all end in the same way? Why are our fingers better for us than claws or hoofs would be?

When we go out in the rain we put on rubbers and mackintoshes to keep us dry. But our arms and other parts of the body have a covering of their own that protects the parts

inside. What do we call this beautiful pink waterproof that they wear all the time? What kind of a covering does kitty have for her fore limbs? Who knows why it is warmer than ours?

(3)

TRAINING OF THE ARMS

As long as children are free to run and play as they like, there is little danger that any part of their bodies will lack exercise, but with the beginning of school life their freedom of motion is much curtailed. They forget how to stand and walk, and lopsidedness often results unless special exercises are given to counteract this tendency and secure the equal development of all parts.

Lessons can scarcely be too short for children in their first school year. Ten minutes should be the maximum, with an entire change of occupation at the end of every period.

Show the children how to sit and stand easily and gracefully, and notice whether they breathe as they should. Have them place the left hand on the chest, while the right arm is moved back and forth, and feel the muscle which pulls the arm inward. Explain that there are other muscles in the back which pull the arms outward, and that both sets must be used if we want fine-looking arms and erect shoulders.

ARM EXERCISE

Place arms on the top of the shoulders, elbows bent. Raise arms above the head, fingers open. Return to top of the shoulders.

Repeat, extending arms horizontally instead of vertically.

Raise arms from the sides to the level of the shoulders. Swing extended arms to the front till the palms touch gently. Return to former position.

Repeat, swinging arms back of the body instead of in front.

Raise arms from the sides to shoulder level, and describe a circle with each from front to back.

FORE ARM EXERCISE

Devote a few minutes every day to physical exercises, to the accompaniment of the piano if there is one in your schoolroom. Let the first signal be to rise. At the second all take position with bent elbows and closed fists on the chest in front of the shoulders.

Drop arms to the sides, opening the hands. Raise again to the shoulders, closing the fists. Repeat, crossing the arms, thus placing each fist on the opposite shoulder.

Extend the arms in front of the body, fingers open. Return to the shoulders with closed fists. Repeat with crossed arms.

WRIST EXERCISE

Arms at the side. Move arms a short distance from the body, and bend wrists until both hands are horizontal, palms open and downward. Move hands quickly back and forth, first towards the body, backs downward, then back to former position, keeping arms meanwhile perfectly straight and rigid.

Arms at the side and a short distance from the body, hands extended. Keep arms perfectly straight and rigid, and describe circles with each hand, backward and forward.



"Holly branch and mistletoe,
And stockings pinned up in a row,
These are thy gifts, December."

FINGER EXERCISE

Arms at side, hands closed. Open the hands. Spread fingers. Repeat, with arms raised from sides to shoulder level, again with arms extended in front, and lastly with arms raised vertically.

Give these exercises one at a time until the children have had them all. Then give one or more of them every day between study periods, stopping always before the children begin to be tired. Alternate with games which exercise the arms, such as oats, peas, beans, and blind man's buff.

(4)

CARE OF THE ARMS

Encourage the children to use both arms with equal freedom. Speak of the arms as their little servants whose duty it is to wait on them. Is it fair to give one of these little servants more work than the other?

Draw a picture of the boy who habitually uses his right arm to carry packages. Why has he grown one-sided? How must we use our two arms in order to be straight?

How many have a little kitten or some other pet at home? Have you ever noticed what tiny paws she has? All four of them together are not so large as one of the mother cat's paws, and the kitten couldn't catch a mouse with them if she tried. How are you going to take care of your kitty so that she will grow into a big cat?

What can boys and girls do to help their arms grow big and strong? They need to eat for one thing. When you outgrow your coats and dresses your mothers can not make them larger unless she puts in more cloth. We have to put more flesh and bone into our arms if we want to make them larger, and the food we eat makes flesh and bone.

How does the blacksmith get such strong arms? Would they be strong if he never used them? Tell ways in which we can use our arms to help them grow. When should we give our arms and bodies a chance to rest?

Notice the condition of the children's hands and arms. Encourage the utmost freedom and abandon in play, but whenever lessons begin insist upon clean hands and faces. No child should be allowed to join in indoor songs or games until he has first met this requirement.

How can we keep the skin soft and flexible on our hands and arms? Watch the hands of the little ones as cold weather comes on and see that they are well dried after being washed, and that the children do not go out to play without gloves or mittens, or stay out long enough to become chilled. Keep a box of cold cream or a bottle of rosewater and glycerine on hand to apply to the little hands if they become chapped.

What kind of arms and hands would we all like best to have? Get the children's thought on this point, then supplement as necessary to show that strong arms and skilful arms are always needed and always have a work to do.

What kind of arms will a boy be likely to have if he drinks beer or smokes cigarettes? Tell the children that beer can make the one who drinks it weaker instead of stronger; and that cigarettes often make the hands tremble when these should be firm and steady. Some men when they want to hire a boy look at his

finger nails. If these are stained yellow by cigarettes they say, "I don't want you. I want a boy who lets tobacco alone?"

What kind of men will the beer-drinking boy and the cigarette-smoking boy make? What kind of men and women do we want to be when we are grown?

AUTHORITATIVE QUOTATIONS

BEER DOES NOT STRENGTHEN

The constant use of beer every day gives the system no recuperation, but steadily lowers the vital forces.—*Scientific American*.

BEER MAKES FAT INSTEAD OF MUSCLE

Beer does not give strength. The use of it can lead to no good result; it may be the cause of infinite harm. Many men who drink beer have large bodies and appear to be very strong; but they are not strong, and the largeness of their bodies is due to the unnatural accumulation of fat, the result of indulgence in beer-drinking.—W. E. BALDWIN, M. D.

TOBACCO INJURES PHYSICAL DEVELOPMENT

Tobacco is especially injurious to young persons whose physical development is not completed.—H. NEWELL MARTIN, M. D., F. R. S.

In boys addicted to the tobacco habit I find an inability to do the work that properly belongs to boys of their age. Where the habit has been abandoned I have found a marked improvement both mentally and physically.—M. F. STARR, Principal High Street School, New London, Conn.

WHAT CIGARETTES DO TO A BOY

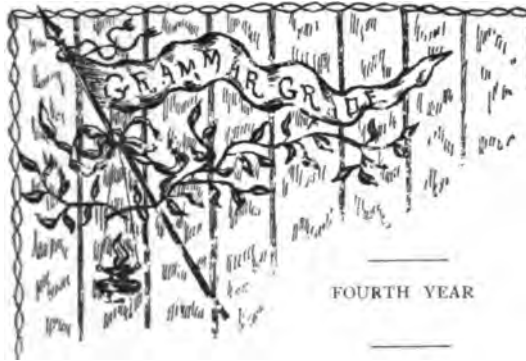
"I am not much of a mathematician," said the cigarette, "but I can add to a man's nervous troubles, I can subtract from his physical energy, I can multiply his aches and pains, and I can divide his mental powers. I can take interest from his work and discount his chances of success."—*Exchange*.

"How the bells ring!

And how, in the far, frosty sky,
The angels sing!

What joy, what hope, what radiance divine
Shines from that star, and shall forever shine!
The song is ringing over all the earth—
Today has seen a wondrous sight, the Saviour's birth!

But ah! the woe
If Christmas bells had never rung
Across the snow!"



CARE OF THE NERVES

VIOLINS which have been touched only by the hand of a master are said to take on a peculiar richness and delicacy of tone which never leaves them. But no violin was ever made which could compare with the nervous system in sensitiveness. In far greater degree, then, the results of habitual action, registered in the plastic substance of brain and nerve cells, leave their indelible mark and determine the character of the individual.

"Habits," in the language of Carlyle, are thus "our supreme strength or our miserablest weakness," and their trend is decided in early youth while the nerve centers are still undeveloped.

If a child learns to smoke cigarettes at this time he may think that the effects will disappear with the odor, but not so. They are as far reaching as the ramifications of his nervous system, and sooner or later show themselves in the enfeebling of all his powers. Within the last decade competition has made good habits and good health a business necessity, and the foundation of both, in the majority of cases, is made or marred before the child has left school. Realizing this fact we must see to it that the training he here receives will help him to form habits of supreme strength, rather than those which will inevitably hinder his progress.

WHAT THE NERVES DO

Hang a map of the United States where the class can see it, and ask some one to point to the capital city. What national officers live there? Name some of the things which they have to do.

Develop the thought that the government of the whole country is carried on in Washington, then ask how the President and Congress can know what laws will be best for people who live thousands of miles apart, in California and Dakota and Maine, to say nothing of the Philippines and Porto Rico. How are all these remote parts of the country connected with Washington?

After brief discussion of the way in which our telegraph system keeps the central government in touch with the whole United States, turn to the physiology lesson, the work of the nerves.

Review the different kinds of work done by the body in the course of a day; that of the hands, the feet, the heart, lungs, stomach, until each organ has been mentioned in turn.

Ask how it is that all these parts of the body know exactly how and when to act. Why is it that the heart never forgets to beat? How does it happen that there is always a supply of gastric juice in the stomach ready to digest the food whenever we eat?

The need of a head manager in the body who is never off duty will be at once apparent. If the class do not know what organ attends to this work, let them find out for themselves at this point from their physiologies.

Show that the brain may be called the capital of the body in much the same sense that Washington is the capital of the United States. But it is in only one part of the body, the head, just as the national capital is in only one part of the country, the District of Columbia. How can the brain know when the feet are cold and be able to send them word to go where it is warm, or when the hands are dirty and need washing?

Hang a chart of the nervous system next to the map of the United States, and compare it to the telegraph system of the latter. Find what corresponds to the central office; to the connecting wires. Some cities have a number of wires connecting them with Washington; others have only one, while most of the small towns are connected with the capital only through some city. Think of reasons for each of these facts.

How does this arrangement compare with that of the nervous system? Think of reasons why all the nerves of the body do not go directly to the brain. Point out nerves which do. Explain the use of the spinal cord in this connection, and show why it is so important. Ask each member of the class to state a message which would reach the brain only by way of the spinal column, and a second kind of message which would always pass directly to the brain without going through this great way station.

When one sends a telegram he usually expects an answer of some kind. Is this true of the messages sent over the nervous system? Have the class notice how the nerves leave the brain in pairs. Trace the course of each pair. Find why they are arranged in this way instead of singly, and how the work of motor nerves differs from that of the nerves of sense.

Name some things we can see or hear or touch or taste or smell. How does the brain

learn how roses smell, or what a bird's song is like? Find the nerves which carry these different messages to it. What kind of nerves do this work?

Explain that every movement of the body is possible only because each muscle is connected with the brain by nerves which tell it when and how to act. Find nerves which move the different muscles and trace their connection with the brain. What are such nerves called? Show that the work of both motor and sense nerves is equally important and that it would be impossible to get along without either.

HOW TO HAVE STRONG NERVES

In these days of high pressure there is more need than ever of physical training which will give perfect health and a well balanced nervous system. To secure this end the teacher must know her pupils out of school as well as in, and so gain the co-operation of parents that the home will work in harmony with the school for the child's well being.

Many a child breaks down in health or becomes peevish and nervously unstrung because of cigarette smoking, improper food, poor ventilation of living and sleeping rooms, or late hours either with or without the pressure of school work. The first symptoms of nervousness or of inability to perform the ordinary class work of this grade should be noted and the real cause ascertained.

Arouse the interest of the children in their own well being by studying with them the needs of the nervous system. Ask whether telegraph instruments and their connecting wires keep in order of themselves or whether they need taking care of, then ask the same question in regard to the nerves of the body.

How can one have strong healthy nerves? Give this general question to the class and at the same time ask each one to study some special nerve and find what kind of care it needs, giving one pupil the nerves of sight or smell, another the nerves which control the heart, a third those which move the arms, and so on till all the important nerves of the body have been assigned for special study.

From the answers thus obtained help the children to decide upon ways in which they can take care of the nervous system as a whole. In this connection they will learn or review the kinds of food which are best for young people, and why eating at any and all times gives the nerves of the stomach too much work to do.

Every young person at some time or other has had something hard or disagreeable to do and knows how he hated it and how cross it made him feel. Some of the nerves suffer in the same way when they have too rich or too poor food to digest. Have the class find which

nerves are thus affected, and think what they can do to make it easier for these faithful little messengers.

When do the nerves rest? All day long we are using those which move our eyes and arms and legs, and they get tired. How much sleep ought we to give them? What nerves do we use when we study our lessons? when we play ball? eat dinner? sew? How are we cheating our nerves when we go to parties which last late at night, after being in school all day?

Railroad officials and business men are more and more forbidding the men who work for them to drink any liquor which has alcohol in it, or to smoke. Have the class find why they issue such orders. An engineer must have good eyesight to know what signals are set for his trains, he must have steady nerves because hundreds of people trust their lives to his care every day. What kind of nerves will he be likely to have if he drinks or smokes?

In any business the most valuable workmen and those who get the highest wages are those who do most and best work. Why are beer drinkers and cigarette smokers seldom in this class?

A boy who takes part in athletics is not allowed to smoke because he must have a strong heart. Find how cigarettes have the power to injure this vital organ.

One of the instructors in the Naval Academy at Annapolis said he could tell what boys used tobacco because all such were unable to draw a clean straight line. What nerves of the body does tobacco harm in such cases?

If we could paint a picture of the one we most admire, or model him in marble, we should never represent him with a cigarette in his mouth or a glass of beer in his hand. Why not? Instead of drawing or painting an ideal man we all have the greater privilege of making him for ourselves, and it is for us to decide whether or not he is to be clean limbed and clean hearted, strong of nerve and pure in mind and body.

AUTHORITATIVE QUOTATIONS

EFFECTS OF ALCOHOL ON THE NERVE CELLS

The first nerve cells and fibers reached by the alcohol in the circulation are those of the vaso-motor system that regulate the caliber of the capillaries. To stiffen or paralyze them is to open the vessels. We see this in the first effect of the drug, in the general flushing of the system, the capillaries everywhere opened, and the heart beating harder and faster to fill the increased spaces. Soon, however, the consciously acting cells and fibers of the cerebrum are reached. The drug occasions in them a dulling of sensibility, or less sensation. If

enough be taken to arrest all motion and all consciousness in the cerebrum, there is complete anæsthesia; if sufficient be taken to arrest motion in the nerve centers that control respiration, or the heart's action, the whole man stops and is dead.—*Journal of Inebriety*.

EFFECT OF ALCOHOL UPON THE TRANSMITTING POWER OF THE NERVES

The effect of alcohol upon the transmitting power of the nerves has been shown by Howie. He found that after two glasses of hock a message from the brain to the hand required for its transmission 0.2970 of a second, whereas the same message, before taking the hock, was transmitted in 0.1904 of a second. By experimenting on the muscular system he learned that two hours after administering two ounces of brandy the degree of muscular force had been diminished one-third.—J. W. GROSVENOR, M. D., in *Journal of Inebriety*.

ALCOHOL LESSENS NERVE CONTROL

The action of alcohol on the nerves, particularly those which control the blood vessels, lessens the power of control and permits the blood to pass with greater force and volume, putting greater strain upon the walls of the minute arteries, and is probably followed in many instances by minute hemorrhages.—T. D. CROTHERS, M. D.

EFFECT OF ALCOHOL ON NERVE SENSIBILITY

In every case the average sensibility to weight and power of discrimination is decidedly diminished by small doses of alcohol, the general average indicating that the sensibility is diminished about one-third.—*Journal of Hygiene*.

EFFECTS OF TOBACCO ON THE NERVES

Tobacco, especially in the form of cigarettes, delays and limits the development of the great nerve centers, and leads to serious impairment of the physical and mental powers.—ISAAC WOOD, M. D., Kingston, Ont.

Tobacco has a pronounced effect upon the nervous system. Through the nerves nearly all the vital organs are affected. At first, the effect of tobacco, to one accustomed to it, seems to be to soothe and quiet the nerves, giving them tone and power; but this is very deceptive. What seems to be an addition of

nervous energy from without, is in reality a subtraction of energy which has been laid up for future use. After a short time the stimulating effect of tobacco ceases, and the nerves are more tremulous than before it was used. Hence we

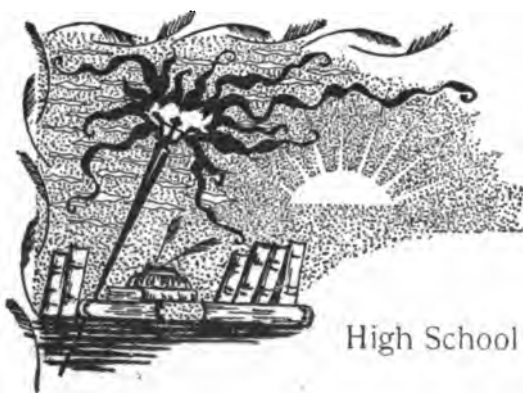


"A Song! A Star! A Child! A Hope! A Light! A Life!
And angels chant of joy for pain, good-will for care and strife."

see tobacco users suffering from many forms of nervousness. One may be affected especially in his temper, becoming irritable and impatient; another may not be able to sleep well; a third is troubled with trembling of the hands, especially noticeable in the handwriting; others are easily startled and excited. Professor Oliver, of the Annapolis Academy, said he could indicate the boy who used tobacco by his absolute inability to draw a clean, straight line.—W. H. RILEY, M. D.

TOBACCO IMPAIRS NERVOUS FUNCTIONS

Tobacco impairs the nervous functions, rendering them more excitable, more irritable, and subject to a long train of nervous affections. * * * This habit also exerts an influence over the brain, as well as over the nerves; it obscures the perception and deadens the sensibility.—*Science of Health*.



THE SECRETIONS OF THE BODY

"I CAN'T afford to use brass faucets," said one brewer to another, "the beer eats them up so fast."

"If your beer eats up brass faucets," commented a commercial traveller, who had overheard the remark, "how do you suppose it affects a man's stomach? It must eat that up."

"That's right," returned the brewer, and a laugh all around closed the conversation. But the remark had struck home and the traveller drank no more beer for his stomach's sake.

A man gets out of his body just what he and his ancestors have put into it. If good material alone has been used in its making he finds himself at maturity possessed of an immense store of dynamic energy which he can employ in whatever work is most congenial. On the other hand woeful disappointment awaits him if he has tried to build a healthy body out of materials which are inadequate or strong only to destroy.

Thorough knowledge of the body and its needs is indispensable to the growing boy and girl if they are to make the most of themselves, and from such knowledge alone is born that reverence which will make them slow to injure this priceless possession.

A study of the secretions of the body is more fascinating than that of any mechanical marvel. There are machines, for example, which are fed raw wool or cotton at one end and turn out finished cloth at the other. But in the tiny workshops of the body foodstuffs are worked over into material which differs chemically as well as physically from the original, and which not only builds and repairs its own structure but furnishes new matter to the body.

This wonderful process should be studied directly after that of digestion and absorption. Begin by making a list of all the organs which secrete or separate out from the blood substances which are to be used again for some special purpose in the body. The salivary,

gastric, intestinal, liver, and pancreatic glands will be found doing such work in connection with the process of digestion.

Study the structure of each of these glands. Find how they are made up, how they differ from one another and from other organs, and the special work of each.

Get from a meat shop portions of the lining membrane of the air passages and alimentary canal of some animal and examine this through the microscope. Notice the appearance and characteristics of such membrane. Find what its function is, and what substance it secretes.

Examine the membranes surrounding bones, joints, muscle, and other organs of the body. Determine how these differ, and the function of each.

Find the different glands of the skin and the distinct work of each. Study the effect of hot and cold weather upon both oil and perspiratory glands, and decide how the skin should be cared for in winter.

Notice the wax secreted by the glands of the ear, and the tears by the lachrymal glands. Find the use of each of these secretions, and determine the effect upon these parts of the body if the glands failed to act.

There are some glands of the body which both secrete and excrete substances. Find which glands these are, and how the process of secretion differs from that of excretion. How can both processes go on at the same time in the same organ?

Make a thorough comparison of glands and membranes throughout the body, finding all points of similarity and difference in their structure, secretions and functions. Study their work as a whole. Notice what each contributes to the welfare of the body, and what the effect would be if each, in turn, should be unable to do its work, or even hindered in its performance.

Learn how both maintain their normal growth and repair, the kind of nourishment they need, and how they are affected by the habits of the body. Determine the conditions under which they can work most effectively, and decide if they are not worthy of as much consideration as the manufacturer shows to his machinery.

Study the effects of narcotics upon glands and membranes, and upon the work of each, finding why they are so sensitive to the poisonous action of these substances, and recognizing in this sensitiveness the strongest arguments against their use. Analyze the authoritative quotations on page 61 in this connection. Each has been selected because of its bearing upon some phase of the subject and all might be multiplied indefinitely without altering the common verdict.

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"Ring, swing, bells in the steeple,
Ring the Star and ring the Cross, for Star and Cross are one.

Ring, swing, bells, to tell the people
God is pleased with manly men and the deeds that they have done."

WRONG IDEAS CORRECTED

THE DESTRUCTIONIST ATTEMPTING CONSTRUCTION

It takes very little ability to find fault and any vandal can tear down, but when the destructionist undertakes the work of construction the scope of his ability is tested. In the section where Professor Atwater of Wesleyan University lives, a class of critics has arisen who take great pains to disclaim him as their patron saint, yet who seem to want what he advocates and to oppose what he opposes. If he is right these followers are right, however much they may disown him. We would gladly drop the question if it did not involve the education of the children on a vital subject, but to that we never can be indifferent.

There have come to our desk printed extracts from a speech by Professor H. W. Conn, fellow professor with Dr. Atwater in Wesleyan University. In it he says, "The teacher should be in perfect harmony with what she teaches." True, but little is "perfect" in this world. If the teacher finds that her sympathy with the statements of geography falls a little below "perfect" shall she stop the study, denounce the teaching as false, and petition the legislature to repeal or modify the law requiring the study of geography in the public schools? Every sensible person would advise that teacher to give more study to geography herself, and the probabilities are that she will discover that her lack of sympathy is due to her lack of knowledge. The same method applied to the study of physiology would convert candid objectors. The whirligig of time alone can save the world from the uncandid.

THE ALCOHOL-A-FOOD FALLACY

Professor Conn further says, "It is not wise for the teacher to raise such questions as whether under any circumstances alcohol can be oxidized in the human system and can serve as food." It is not surprising that a friend of Professor Atwater should not want that question raised, but it has been raised by Professor Atwater himself, and the utmost pains have been taken through the public press to convince the people of this country that he proved that alcohol in certain quantities in being oxidized in the system acts as food.

The cause of truth and of God's reasons for total abstinence written in blood, brain, nerve and tissue demand that every one should know that Professor Atwater did not, as claimed, prove that alcohol acted as a food in protecting the material of the body of the man he experimented on, but, on the contrary, his own figures in his report of those experiments show that alcohol caused the loss of valuable body material; in other words, it acted not as a food but as a protoplasmic poison. Furthermore, at this stage of the world's history, it should be universally known that the fact that a substance can be oxidized in the system is no proof that it is a food, for many known poisons are oxidized in the system, causing injury and death. To exclude these phases of the subject from pupils advanced enough to understand them is to leave their minds open to be misled by the inviting fallacy still lingering in the air that Professor Atwater proved alcohol, to the amount of two and one half ounces per day, to be a food.

The twelfth census shows that more than 57 per cent. of the population of Connecticut are foreign born or the children of foreign born. These majorities have brought to this country the old world belief that alcohol is a food. This belief is their reason for drinking it in some form, to the profit of the brewer and distiller but to the peril of the state whose future depends on the character of the foreign born citizens who will constitute the majorities, the law-making power in Connecticut, in the near future. In order to be good citizens these people, as well as many who are native born, need to be taught the demonstrated truth of science that alcohol is not a food, as people understand the meaning of the word food, but instead is a poison which has the power to injure health and to destroy life.

The opinion of medical science today as to the food value of alcohol is expressed by Professor James M. Anders, M. D., LL. D., of the Medico-Chirurgical College of Philadelphia, who says of alcohol in the *Philadelphia Medical Journal* of October 13, 1900:

"In health it is never a food in any sense, be the quantity small or large, but always a poison, biologically or physiologically speaking. In disease it is neither a food nor a poison, but may be a suitable and helpful drug. Neither in the last analysis or fullest synthesis, in health or disease, is it a 'partial food,' in small, so-called moderate, or in excessive quantities."

A close analysis of the history of the opposition to scientific temperance teaching in the public schools shows that one of the chief points on which the objection is focused is to children being taught that alcohol is not a food, but a poison.

The newspapers said Professor Atwater performed his famous calorimeter experiments to prove the indorsed text-books wrong in that respect. The *Wine and Spirit Gazette*, asserting that he had proved what was claimed, tauntingly asked:

"Will these false prophets now cease to rant about 'alcohol as a poison;' will they revise their text-books on temperance physiology, and cease their false and misleading teaching in the public schools; will they be honest enough to admit that alcohol is a food and not a poison?"

We replied, "Certainly we will so revise them when it is proved that alcohol is a food and not a poison according to standard definitions of the words food and poison, but not until then, for mistaken ideas on this point are filling thousands of drunkards' graves."

We can understand why those who traffic in alcoholic drinks object to the rising generation being taught that alcohol is a poison. It is hurting their trade, but other objectors who are sincere in motive greatly need to read further on this burning question.

A PHYSIOLOGICAL OR A MORAL QUESTION

Professor Conn further says:

"The question of temperance teaching is not primarily a physiological one. The teaching should be based on morals and upon the experience of the world as to its bad effects, rather than upon a scientific argument."

To us this seems most illogical. The drinking of alcoholic liquors is morally right if they do no harm to the human system. If they do harm, it is morally wrong, hence the moral side of the question depends primarily on the physiological side. As the sociological consequences following the use of alcohol are the result of its physiological effects upon the human being, it is difficult to understand what Professor Conn can mean by saying,

"The foundation of temperance teaching

should be based not upon physiology but upon this general line of the general injury to men."

Then he goes on to say that the notions may be met that may influence a boy to drink, and instances them as:

"Supposed increase of strength. Alcohol does not make one strong. It tends to weaken, not strengthen. Alcohol does not enable a person to endure cold. It does not materially increase bodily heat and certainly does not increase the power to resist cold. It is also desirable to emphasize the bodily injury that comes from the alcohol habit. As soon as the use of alcohol becomes a habit it begins to injure the body, and the more alcohol is used the greater the injury. It lessens the muscular power, blunts sensation, dulls sensibility. Its user can not see so acutely nor act so promptly. The sense of touch is less acute. Alcohol dulls the mind, decreasing the capacity to think clearly and consecutively. Alcoholic drinks lessen the power to resist disease. Those who use them are more likely to be attacked by any of the ordinary diseases than those who abstain and are less likely to recover from severe diseases. This drug destroys ambition, in a word leads to ruin."

We cordially agree with Professor Conn that every one of the foregoing important truths should be taught, but they are physiological facts and constitute an important part of the physiological basis on which the reasons for total abstinence rest. How would he teach them, by dry dogmatic statements that the pupil must receive on his authority? Would he have the facts taught but not the reasons that prove them to be facts? That would be a violation of the fundamental principles of modern pedagogy which insist that the pupil shall be led by progressive stages to see the reasons that support statements he is asked to receive as truth.

To the question, how would we teach a boy that alcohol does not increase strength, we reply that an intelligent understanding of the relation of alcohol to strength presupposes some knowledge on the part of the pupil of the muscular system, its nerve control, its nutrition and of the inherent nature of narcotics. Such knowledge enables the pupil to see the physiological absurdity of supposing that alcohol can increase strength. A knowledge of the related physiological facts would give reasons for the other physiological points cited.

Professor Conn certainly can not mean that he objects to the pupil being led to understand the reasons for the physiological statements he would have taught. He is too good an educator for that, consequently he must have been inaccurately reported.

AUTHORITATIVE QUOTATIONS*

ALCOHOL INJURES THE ORGANS OF SECRETION

The destructive and degenerative effects of alcohol are wide spread and general on every tissue and cell of the body. It physiologically deranges the functions of the organs, then their structure.—A. D. McCONACHIE, M. D.

ALCOHOL IRRITATES MUCOUS MEMBRANE

If moderately diluted alcohol is a slight irritant to the mucous membrane of the mouth, pharynx, and stomach—increased in quantity it has a reflex action on the circulation.—SURGEON-MAJOR G. F. POYNTER, A. M. S.

ALCOHOL LESSENS SECRETION OF GASTRIC JUICE

When constantly irritated by the direct action of alcoholic drinks, the stomach gradually undergoes lasting structural changes. Its vessels remain dilated and congested, its connective tissue becomes excessive, its power of secreting gastric juice is diminished, and its mucous secretion is abnormally abundant.—H. NEWELL MARTIN, M. D., F. R. S.



Madonna of the Carpenter Shop

ALCOHOLIC LIQUORS WEAKEN ACTION OF PEPSIN

Hugouence found that all wines, without exception, prevent the action of pepsin upon proteids. Gluzinski showed that alcohol causes an arrest in the secretion of pepsin, and also in its action upon food.—J. H. KELLOGG, M. D.

INFLUENCE OF ALCOHOL ON THE VITAL ORGANS

Alcohol exerts its essential and most significant influence on the vital organs by being taken up in the circulation and thus brought into direct contact with their cellular tissues. Cirrhotic liver, diseases of the kidneys and of the mucous membrane of the alimentary canal,

along with gout, diabetes, and fatty degeneration, are all ascribable to it.—ADOLF STRUMPELL, M.D.

No man who is addicted to the chronic use of alcohol or opium possesses a healthy body. The cirrhotic liver, the hypertrophied kidney, the atrophied secretory glands, the degenerate cerebral nerve cells, pulmonary interstitial hyperaemia, etc., all indicate an unmistakable pathological condition.—H. J. HALL, M. D.

Many cases of cirrhosis of the liver of quite young children are on record. A boy five years old had been in the habit of drinking a great deal of wine, and was the subject of acute alcoholic neuritis.—*British Medical Journal*.

ALCOHOL CHANGES THE DAILY SECRETIONS OF UREA

German physiologic chemists have noted that the ingestion of alcohol regularly between meals changes the regular daily secretion of urea to a critical secretion, the daily amount secreted falling to a minimum, then suddenly rising to a maximum and then declining again, but the total excretion falling considerably

below the average normal secretion. Alcohol, then, produces a chronic uremic toxemia by its intoxicating effect on the epithelium of the kidney.—MILTON J. PARKE, M. D.

ALCOHOL AND THE KIDNEYS

Alcohol produces hypertrophy of the kidneys, thereby causing an altered amount of secretion of urea and other normal constituents of the urine, which, in turn, tends to produce headaches, neuralgia, anorexia.—I. N. QUIMBY, M.D.

SMOKING IMPAIRS THE SECRETIONS

Smoking is very apt to set up an irritation of the stomach and a disordered state of the secretions. This is due in part to the large amounts of saliva and mucous swallowed, and in part to the systematic action of the poison.—H. F. HEWES, M. D., Instructor in Physiological Chemistry, Harvard.

*To be used in connection with the High School Lesson on page 58.

CHILDREN OF MANY COUNTRIES

IV. CHRISTMAS

CHRISTMAS is the children's day of days in all Christian lands, and Santa Claus and gifts, Christmas greens and merry-making in some form or other are found nearly everywhere.

All the boys and girls in the United States know how they celebrate Christmas. They can tell about the stores filled for weeks with beautiful things and gay with Christmas greens that are to be put up in the homes and churches. They know the excitement of the mysterious bundles that come into the house and are smuggled away out of sight, to appear later in the children's stockings or on the Christmas tree. Best of all, they know what fun it is to prepare their own little gifts for others and keep them safely hidden away until Christmas comes. Perhaps, too, they help make the day and all winter brighter for other boys and girls who are less happy and well provided for in their homes than they.

But I wonder how they would have liked to be boys and girls when some of their grandfathers and grandmothers were young, for they can remember when they did not notice Christmas at all, but went to school and did everything just as on other days. This was especially true if they lived in New England, for their Puritan grandfathers and grandmothers had been sternly opposed to any observance of the day, because it was a custom of the church whose persecutions they had fled from the mother country to escape. So it was many years before the children of New England knew very much about celebrating Christmas.

But the people in the middle and southern states who came from Holland or the state church in England brought their Christmas customs with them. Santa Claus, for example, while he did not come over in the Mayflower as so many good people did, came very early with the Dutch of New York and has become as dear to the children of America as he was and is to the Dutch boys and girls, although the latter know him, not as Santa Claus, but as "Knecht Clobes."

Sometimes the Dutch children place their queer little wooden shoes outside the door for Santa Claus to fill, just as the German and English and American children hang up their stockings. I should think stockings would hold more than those stiff little shoes, wouldn't you?

In Germany, Santa Claus has still another name which I shall not ask you to try to pronounce, but which means St. Nicholas. Sometimes we too call him that or shorten it to St. Nick. The German children look forward

to his coming with both fear and joy, for he knocks on each door at Christmas Day and questions their parents as to the children's behavior during the year. If it has been good, he scatters sweets and nuts and apples among them, but sometimes leaves a little bundle of sticks, probably to be on the safe side in case they should be needed during the coming year.

From Germany came the Christmas tree with its gifts, lighted candles and glittering ornaments, and there is no home in that land so poor that it does not have its tree, be it ever so tiny and the gifts ever so simple. But instead of having one large tree for the whole family as we do, each German child has a tree of his own, making really quite a little forest if there happen to be several children.

It is said that the Christmas tree and gift exchanging became general in England through Prince Albert, the husband of Queen Victoria. He was a German, and when the first Christmas came in the new royal home in England he wanted to keep up the customs of his own country. So, through all the life of the good queen, even long after Prince Albert died, she took great pleasure in planning for the Christmas tree and the gifts for the royal children and grandchildren and other members of her family, and for her friends and servants.

Could we have peeped into English homes three or four hundred or more years ago at Christmas, or Yule tide, as the people called it, we might have enjoyed a celebration quite different from that of today.

On Christmas eve after the candles were lighted, a great log called the Yule log was dragged into the house and thrown upon the blazing fire. This was the signal for the merry-making to begin. The houses and churches had already been trimmed with evergreen and holly and sometimes mistletoe. At court and in the homes of the rich, a Lord of Misrule was chosen to take charge of the revels. There were games and conjuring, music and dancing, the gayest time imaginable. Sometimes in the midst of it would be heard the Christmas carols sung outside by bands of children who went from house to house, receiving as they sang, perhaps gifts of money, perhaps some of the many things to eat and drink which the people inside were enjoying.

Eating and drinking were, in fact, a very important part of the Christmas celebration. The favorite dishes were the head of a boar with an apple or an orange in its mouth, plum pudding and mince pies.

Many of these old rude customs are no longer followed in England. No Lord of Misrule has been chosen for many, many years. But the homes and churches are still made bright with Christmas greens, while the family

SCHOOL PHYSIOLOGY JOURNAL

parties, the Christmas tree, the gift-making and the helping the poor make it no less a happy day for the English children than when the Lord of Misrule conducted his somewhat noisy revels.

In Sweden everybody who possibly can, from the grand parents down to little children, goes to church very early on Christmas morning. At five o'clock or earlier three candles are lighted in every window fronting the street so that as the people go to church the houses are all ablaze with Christmas light.

A gentleman who was once United States minister to Sweden tells a pretty story of the Christmas spirit in that country. He says :

"One winter day at Yule tide I had been skating on a little lake near Gottenberg. On my way home I noticed at every farmer's house, erected in the middle of the dooryard, a pole to the top of which was bound a large full sheaf of grain. 'Why is this?' I asked. 'Oh, that is for the little wild birds. They must have a Christmas too.' There is not a peasant in Sweden who will sit down with his children to a Christmas dinner until he has first raised a Christmas dinner for the little birds that live in the cold and snow without."

The same idea is found in Norway where it is said that "the poorest peasant, the tiniest child, will hoard a coin, if but the smallest, to buy a handful or two of grain to swell the birds' Yule-tide feast." In Norway the animals, too, have a share in the Christmas joys, for they are always given a specially good dinner on that day. So the Norwegian boys and girls are happy in having shared their pleasures as far as they can with even the birds and beasts, while they themselves, dressed in their very best, visit one another and feast and shout and

dance and sing and play games and give and receive simple gifts.

Were you to go to Brittany on Christmas eve you would see the country people all leaving their homes late in the evening to go to midnight mass in their churches. Why are they all carrying lanterns? They do not need them to light their way when the moon is shining. Watch and you will see. When they reach the church the lanterns are handed to the poor old

women of the village who seem to be waiting for them, and when mass is over the lanterns are taken again by the owners who give to the old women in return coins which will help make not only Christmas day but the whole year happier and more comfortable for them.

The children in Spain are very fond of music, and often, even when so poor that they have to work all day, spend their extra time in learning to play and sing. So on Christmas eve the poor Spanish boys, like the English carolers, go from house to house singing and playing, and with the money gladly given them by the people they have a good supper together.

The Russian carolers are much more original in their performances. Boys dress themselves up as animals, such as wolves, dogs and donkeys. Others act as keepers. With a band of rude musical instruments they go from house to house. When the doors are opened the animals dance and caper and their keepers show them off. Then food is brought out for all and small pieces of money are distributed.

Can you find Armenia on your maps? Even here in a corner of the Turkish Mohammedan empire Christmas is joyfully kept. For days before, everybody is busy putting the houses in spotless order. Then as the bells ring in the early morning before daybreak young and old



"A Puritan Family," showing the Minot cradle.*

*From Orcutt's "Good Old Dorchester."

all go to church for the Christmas service. After this the children and grandchildren of each family go to the grandparents' for breakfast. In some parts of Armenia a row of little candles is lighted, and while they burn, the father or grandfather makes a Christmas speech which lasts until the little candles are entirely burned. Do you suppose the children are all quite patient through this waiting for the feast to begin and the gifts to be distributed? We hope so.

After the feast the men pay visits, the other members of the family remaining at home to receive them. Sweets are offered to the visitors. Nor are the poor forgotten in the midst of the pleasures of the day, for the same spirit which feeds the birds and animals in Scandinavia, and the poor in Wales, Brittany, Germany, England and America, shows itself in far-off Armenia.

So, while in different countries each has its own customs and ways of enjoying Christmas, each, too, has its own ways of showing the true Christmas spirit of love, the giving without expecting to receive in return, which is the greatest joy of all.

"What is the thought of Christmas? Giving.
What is the heart of Christmas? Love.
What is the hope of Christmas? Living.
What is the joy of Christmas? Love."

THE CHRISTMAS MUMMERS

Hark! what is it the mummers say,
Bearing the holly and ivy spray?
"Praise for a child is born today!"

Hark! what is it the mummers sing,
With triumph in their caroling?
"Praise, for today is born a king!"

Hark! what is it the mummers call,
Chorus with rapturous madrigal?
"Praise unto Him who is born for all!"
CLINTON SCOLLARD.

CHRISTMAS

'Tis a beautiful time when Christmas comes
All up the street and down.
For hearts alight make faces bright
When Christmas comes to town.
Neighbor and friend in gladness meet
And all are neighbors dear,
When the Christmas peace bids evil cease
In the holiest day of the year.

The fair white fields in silence lie,
Invisible angels go
Over the floor, that sparkles hoar
With the glitter of frost and snow.
And they scatter the infinite balm of heaven
Wherever on earth they stay,
And heaven's own store of bliss they pour
On the earth each Christmas Day.

MARGARET E. SANGSTER.

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"The feet of the humblest may walk in the
field
Where the feet of the holiest have trod,
This, this is the marvel to mortals revealed
When the silvery trumpets of Christmas have
pealed,
That mankind are the children of God."

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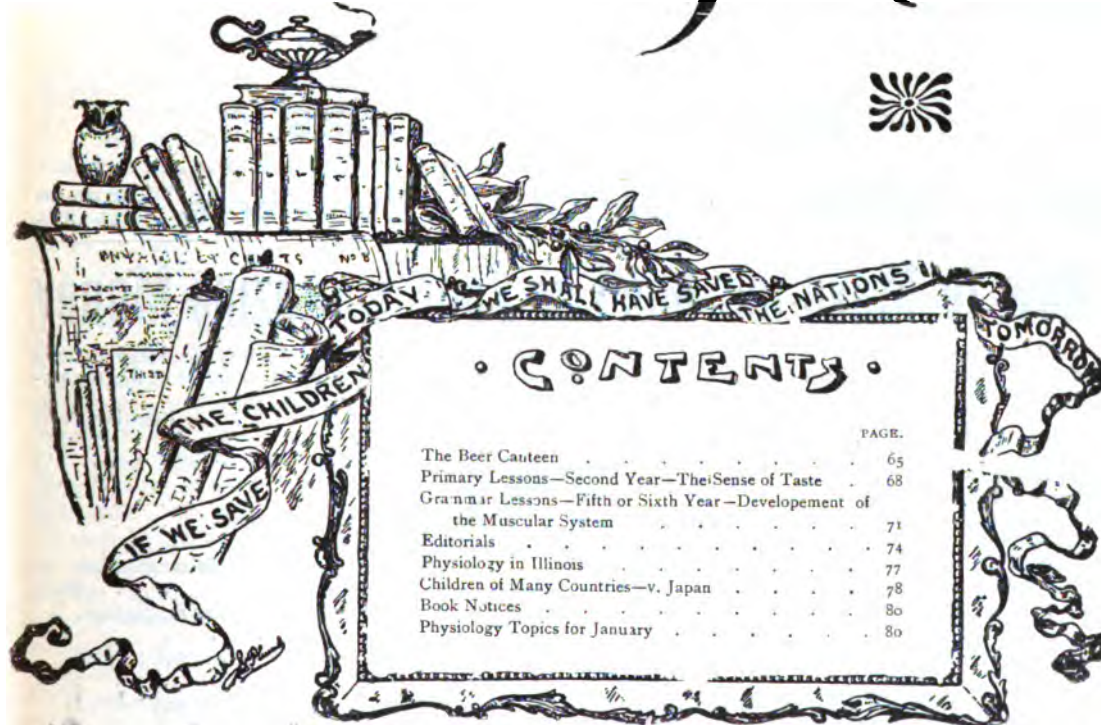
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School Physiology Journal

Vol. XI

BOSTON, JANUARY, 1902

No. 5

A CURFEW SONG

Quenched are the fires of red and gold,
Now falls the year's long night;
And on the world's wide hearth behold
The heaped up ashes white.

Yet, underneath, the embers bide,
With fragrant hearts aglow,
Until she comes to brush aside
The ashes and the snow.

The bluebird once shall call, and then
The wind shall lisp her name—
April—and these dead flowers again
Shall waken into flame.

—FRANK DEMPSTER SHERMAN.

THE BEER CANTEN

THE ARMY of the Continental Congress, afterwards the army of the United States, was organized in 1776, with George Washington as commander-in-chief.

Five million men have worn its uniform during the one hundred and twenty-six years of its existence, and have successfully fought five great wars. In one respect these conflicts differ from those of any other nation. Not one of them, if we except the Mexican, was a war for conquest, but for the achievement and "extension of the principles of liberty for which our nation stands."

History tells that Baron Steuben swore in three languages at the ignorance of the first United States soldiers of the most elementary evolutions. But a lofty purpose made those raw recruits apt scholars in the art of war for our national independence. From that day to this our citizen soldiery have made this nation their debtors. The progress, almost beyond estimation, of our country has not been due to conquest, but to the educational advancement of its people and their industrial development of the vast natural resources of this continent. Our population of seventy-five millions has not come unwilling captives from conquered lands, as did the foreign population of old Rome. On the contrary, our foreign born have eagerly come to this land of freedom as to the Eldorado of all their dreams. Their presence has created no need of an army for defense, for when emergency required they have themselves entered the ranks to defend the flag of their adopted country.

MUST WE HAVE AN ARMY

Why, then, do we need an army and navy? Wide oceans stretch between us and possible enemies. We believe that reason should take the place of force in settling differences between nations. But this implies that all nations are sufficiently civilized to be reasonable. In the events that led up to the Spanish war we learned that as long as a government is capable of selfish tyranny and will not be deterred except by force, then a strong neighbor must either be responsible for such atrocities or put them down with the sword.

Again, our wealth, our strength, and righteous determination that the weak republics on this western hemisphere shall not become the prey of the overcrowded monarchies of Europe demand that we shall not be in the condition of the householder who, having under his roof great and precious heritages for his children, neglectfully leaves his doors wide open in the presence of brigands. Growth of wealth and strength and opportunity means growth of rivalry. Brooks Adams in the August *Atlantic* says:

"In European eyes, America offers the fairest prize to plunder that has been known since the sack of Rome, and, according to European standards, she is almost as unprotected as was Holland before Louis XIV. There must be compromise or war, or else America must be so strong that war is deemed too hazardous to be attempted."

IF CONFLICTS COME WILL BEER HELP US SETTLE THEM ARIGHT

If then, until our prayers are answered by the coming of the day when "the sword shall be turned into the ploughshare," we must have an army and navy, what kind of an army and navy shall they be, and shall we feed them on beer?

It goes without saying that this army should represent our best American citizenship. The character of the men who wear the United States uniform should represent the flag that floats over them, and that flag stands for the upholding and defense of liberty under law. Its defenders, therefore, should be not only brave, but morally and physically strong, law-abiding men.

But will beer-drinking help to produce that moral and physical strength which has made Old Glory such a blessed symbol?

The Germans are known pre-eminently as a nation of beer-drinkers. What has beer done for the German soldier? An authoritative report says:

"As the result of an inquiry made in 120 military prisons in Germany, it was found that 46 per cent of the murders were perpetrated by soldiers under the influence of drink; 74 per cent of immoral acts are attributed to the same cause. In the navy, out of 1671 punishable cases during the past six years, it has been proved that 75 per cent of the gravest misdemeanors were due to drunkenness."

Professor Sikorsky, in the report of the Russian Commission for the Study of Alcoholism, says:

"Alcoholism diminishes the rapidity of thought; it provokes explosions of bad passions and dispositions; predisposes to assaults and crimes; interferes with habits of industry and perseverance."

Our first indictment against beer is that it lowers the soldier's moral sense.

WILL BEER HELP THE SOLDIER PHYSICALLY

Modern warfare demands intelligent alertness, coolness, self-restraint, strength and precision of muscle, and protracted endurance in action. A German correspondent puts this very clearly in a letter to his home paper:

"In earlier times, when the method of fighting was to run down the antagonist by a wild dash, alcohol probably had its effect. But now tranquility, cold-blooded deliberation, iron endurance, a steady hand, a clear eye, a quick decision are the qualifications which the warrior must possess. The thing is not to underestimate danger, but to recognize it, by foresight to diminish it, and if that is not possible, to meet it coolly."

The effect of alcohol on these qualities is well described by Dr. G. Sims Woodhead, professor of Pathology in Cambridge University, England:

"The most highly specialized characteristics are first impaired by the use of alcohol. . . . Then follows a distinct diminution in the power of rapidity and accuracy of perception." "People imagine that they can do a thing more quickly, that they are brisker and sharper, but exact measurement proves that they are slower and less acute."

A distinguishing characteristic of the American soldier, as reported by the foreign military attachés during the Spanish war, is the intelligent alertness and independent initiative of the private. How is the brain, which is the source of this alert intelligence, affected by alcohol?

Dr. Brunton, a celebrated English authority on the action of drugs, says:

"Alcohol lessens the activity of the brain cells themselves by its direct action on them, even while it may be stimulating them by quickening the circulation."

It might make the soldier, in the language of the street, a hustler for a brief time, but he could not hustle to a purpose.

Our second indictment against beer for the soldier is that it impairs his physical strength and efficiency.

ALCOHOL AND DIGESTION

A famous military authority said, "The army moves upon its stomach." This being true, it is very important to learn how the alcohol in beer will affect the organs and process of digestion. In the very elaborate experiments on the effects of alcohol on digestion reported by Chittenden and Mendel in the *American Journal of Physiology*, it was found that the digestive process took from one-half to three-quarters of an hour longer when alcohol was given with the meal than it did when it was not.

Third indictment—Alcohol will not help the soldier digest his hardtack.

ALCOHOL AND OTHER ORGANS

Other vital organs affected by the strain of military life are the heart, kidneys and lungs.

William Osler, M. D., says:

"Disturbed innervation and increased work are the two principal causes of an increase in the size of the heart. Certain poisons . . . appear to act in this way, as . . . alcohol and tobacco." "The slow poisoning by alcohol is a very frequent cause of a gradual fatty degeneration of the heart."

Prof. Binz, of Bonn, says:

"All forms of irritation of the kidneys and urinary passages are usually aggravated by the use of alcohol. Even healthy kidneys are irritated by moderate doses of alcohol."

Dr. A. Volland, of Tübingen, Germany, says that no one falls a victim to consumption so easily as the drinker, whether he drinks brandy-water, or wine and beer.

Fourth indictment—Science and experience show that alcohol, instead of helping any organ of the soldier's body to do its best work, has the power to injure every one of them.

Prof. H. Newell Martin, F. R. S., of Johns Hopkins University, said:

"Probably no one individual ever suffered from all the diseased states produced by alcohol; but all habitual drinkers sooner or later experience one or more of them."

Military statistics show that the proportion of men killed or fatally wounded in battle dur-

ing a war is only a small fraction of the number of soldiers who die of diseases. Experimenters have found that alcohol greatly increases susceptibility to disease and the ability to resist disease germs. This is true not only of large amounts of alcohol, but of what is called its moderate use. The most recent experimenter on this point, Laitinen, says:

"Alcohol under all circumstances increases the susceptibility of the animal body to infection, whether it be given only before or after the inoculation, and whether in a few large doses or numerous small ones extending over a long time."

Fifth indictment—Alcohol predisposes to the diseases that are more to be dreaded by the soldier than bullets or bayonets.

All this, perhaps you say, may be true of taking too much, but the limited amount of beer the soldier is allowed to drink in a post exchange or canteen ought not to be forbidden him because some one else has drunk too much.

Under the most careful regulations there is no guarantee that the men who patronize the canteen will confine themselves to small amounts, and, even if they should, scientific research today shows small amounts to be harmful. Dr. Victor Horsley, in his celebrated Lees and Rapier lecture last year, said:

"The contention so often urged that small doses of alcohol, such as people take with their meals, have practically no deleterious effect, can not be maintained; from the scientific standpoint total abstinence must be the course, if we are to follow the plain teaching of truth and common sense."

While it has long been admitted that distilled liquors are injurious, the idea still lingers that there is no special harm in beer. Scientific testimony on this point is voluminous and incontrovertible. Dr. G. von Bunge, of Basle,

Switzerland, the greatest physiological chemist of the age, says:

"It is not the concentrated alcoholic liquors alone that cause heart and kidney trouble, but pre-eminently the continued immoderate use of beer." "Nothing from the physician's standpoint is more false than the belief that the progressive dislodgment of other alcoholic drinks by beer will diminish the destructive influences of alcoholism."

The great mass of testimony derived from observation, experience, science, and reason shows that there is no justification for the continuance of the sale of beer to the American soldier, either with or without government sanction. The man who will desert because beer is not sold in government-approved dramshops, is not a source of strength, aid or credit, and the soon-

er the army is rid of him the better; the man who would not enlist because beer is not sold in the canteen is not wanted. He is unfit to be an intelligent protector of American liberties. Gen. Miles tells us that the young men who are enlisting in our armies are not



"The rushing storm sweeps past, on wild and rainless blast,
And leaves the wind-swept world a whitened floor."

drinking men. They are from respectable, sober homes. To place these young men where they will be tempted to drink beer every time they go to buy a sandwich or other personal necessity in the army exchange, or where they will be considered stingy if they will not, through buying beer, contribute their share to the extra rations that come from the sale of beer, would be a crime.

Moral and physical strength are needed alike in civilian and soldier in all our land, in order that both may be true representatives and defenders of our blood-bought liberties. Alcohol, when brought to the bar of experience and science, is condemned on every indictment.

To restore the government right to the sale of beer in our army or navy would be to announce to the world that we have decided to weaken our defences and thus to invite attack.

MARY H. HUNT.



THE SENSE OF TASTE

WHILE sense-training has now a recognized place in most schools, it is extremely likely to be one-sided, the eye and ear being cultivated at the expense of the other sense organs.

This is unfortunate, because the world is not made up of sights and sounds merely. On the contrary, "all the senses must hand in their report before we can be said to know a thing." If one is neglected we must remain in ignorance of the facts which it alone can impart, and corresponding lack of brain power is the result.

In addition, there is a special reason why the sense of taste should be properly developed in children. It lies at the bottom of many of their pleasures and thus its training will decide in large measure their power of self-control.

The child likes the taste of cake. If he is allowed to gratify this desire at all seasons his digestive organs are soon out of order, perhaps irremediably, and chronic dyspepsia is his portion in middle life.

The years spent in the grammar school, if not in the primary grades, will almost certainly determine the child's future attitude toward the cigarette and the beer mug. If he learns during this time to distinguish between true and false pleasures of the palate, and to make this sense his minister instead of his master, he has fought and won a great battle in right living.

THE ORGAN OF TASTE

Object lessons are a first essential in developing such a topic as the sense of taste with primary children, and the teacher should provide plenty of material at the start. It will be found an advantage to select articles of food which all children like and which they do not see every day.

A cake of maple sugar to begin with will prove attractive. Cut it in small pieces and give one to each child.

Ask what it is. What makes us think it is maple sugar. It looks like it, it is true, but there may be several things that have the same appearance. Is there any other way in which

we can find out? Yes, we can taste it. Do so, and see if we were right.

How does maple sugar taste? Name something else that is sweet? How did you find out? Where is our sense of taste? Have the children put another bit of the sugar into their mouths and find where it tastes sweetest, in the roof of the mouth, on the sides, or on the tongue? Try putting sugar on different parts of the tongue to find which part is most sensitive to sweet substances.

Name something we can taste which is not sweet. Cut up a sour orange and pass it around. Ask the children to touch it with the tip, sides, and back of the tongue before eating it, and find what part of the tongue tastes sour things most quickly. Do the same with a pinch of salt. Name all the different kinds of things that we can tell by the taste.

TWO SENSES THAT WORK TOGETHER

Did you ever see a boy who would go on an errand all by himself if he could get some other boy to go with him, or a girl who liked to play alone? I never did. But perhaps you will be surprised to find that the sense of taste likes help, too, and never works alone if it can help it. Let us see if we can find which of our other senses works with it.

Call one of the children to the front of the room. Ask him to shut his eyes and hold his nose tightly with his handkerchief. Place a bit of apple in his mouth and have him try to tell what it is by the taste alone. If he fails, as he probably will, try him with another piece while he keeps his eyes still shut, but this time has his nose uncovered.

What sense helped taste to know that it was apple which was eaten? Name other foods which we know by the odor as well as by the taste. Where is our sense of smell? We can play that smell and taste are two boys who live next door to each other. Perhaps the reason they are placed so close together is that they may help each other in their work.

How do things taste when we have a cold in the head and cannot smell anything? When we have burned the mouth with hot soup? These are other ways in which we know that taste and smell help each other.

WHAT THE SENSE OF TASTE DOES FOR US

How many of you have been to the circus or to some entertainment for which you had to have tickets? You remember the guard in blue coat and brass buttons who stood at the door to keep out everybody who had no business inside, and how you had to give him your ticket before he would let you pass. Perhaps you thought it would be great fun to be in his place,

and take tickets, and you never dreamed that you had a special watchman of your own.

This watchman of yours is dressed in red or pink instead of blue, and he, too, always stands at the door to decide upon the guests that are to enter. Do you know what his name is? It is Taste, the very sense that we are studying about.

Put out your tongues as far as you can so that we can all look at them. They can never go away even if they want to. Why not? What do these little watchmen do for us? They do not take tickets as the guards at the circus do.

This morning I bit into a bad place in an apple I was eating. I did not see it but I spit it out as quick as a flash. How did I know it was not good to eat?

Taste told me. Tell some things it has told you today. How does taste keep us from burning our mouths with too hot food? From hurting our teeth with anything that is too cold?

We need food every day to keep us alive and well, but if nothing we ate tasted good we might forget to eat as often as we ought. Name something else, then, that taste does for us.

HOW TO TAKE CARE OF THIS SENSE

Taste is a very important little watchman, because if he were to make a mistake and not tell us when we ought to eat, and how much, or if he were to tell us that some things were good for us when they were not, we might be made ill by his carelessness. Perhaps a story will show how this is true. We will call it

DOROTHY'S LITTLE SERVANT

Dorothy was a little Dutch girl. She wore a white kerchief and cap and a dark stuff dress which reached almost to the floor.

She was very fond of cherries, but none grew in her father's yard so she seldom had as many as she wanted.

One evening she had just finished her supper of bread and milk when her father came home with a large basket of cherries.

"Can't I have some right away?" she asked. "I do love them so."

"Not tonight," her mother told her. "But you may have some for breakfast."

That was a long time to wait, but Dorothy knew it was no use to tease when mother said "No."

By and by she stole into the storeroom for another look at the cherries. How big and red they were! It surely would do no harm to take one. She reached up to the shelf and selected the finest, then another and another.

Half an hour later her mother heard her crying with pain. "My stomach hurts me," sobbed Dorothy.

Her cherry-stained fingers told the story, but mother did not say a word. She put hot flannel on the aching stomach until the pain stopped and Dorothy fell asleep.

The next day Dorothy told about the cherries she had eaten, and her mother explained why they had given her a stomach-ache.

"It was because you ate them right after your supper," she said, "Cherries are too sour to eat with milk."

"But they tasted good," said Dorothy.

"Yes, but we can not always trust our sense of taste. Sometimes it makes mistakes. We must train it to like only what is really good for us to have. Then it will be our little servant and not our master."

"Just as Hans is Mr. Myer's servant?" asked Dorothy.

"Yes, just the same, and you must decide whether you will give the orders and see that it obeys, or whether you will let Taste tell you what to do."

"I think I'd rather give the orders," said Dorothy, "but you must tell me what to say."

"I'll help," said mother, "and when we get this little servant well trained, I'll tell you about some others that you have."

ENEMIES TO GUARD AGAINST

When a man wants a good watch dog to guard his home, he has to begin early, when the dog is a puppy, to train him. He teaches the dog not to bark when any one of the family comes into the house, but only when strangers approach.



It surely would do no harm to take one

So we have to begin very early to train our sense of taste to let only the right kind of thing enter our mouths, because our bodily houses are much more precious than those others we live in which are built of stone or wood.

If a robber came every day to our homes and petted the watch dog, and gave him bits of meat, it would not be long before the dog would think he was really one of the family and would not bark if he should try to get into the house some night.

A robber that sometimes tries to deceive our sense of taste in this way is Mr. Cigarette. When he first enters the mouth, Taste says, "Oh, that is a bad fellow, sure enough. Out with him!"

If we mind the warning we shall be all right, but if we let Mr. Cigarette keep on coming, by and by Taste will get so used to him as to let him in without a word. Then we shall find some day that he has robbed us of our health and ever so many other good things.

Perhaps he will leave us with weak hearts, or trembling hands, and we shall be almost sure to stand at the foot of our classes, because Mr. Cigarette has robbed our brains as well as our bodies.

Another robber that we must train Taste to look out for is Mr. Alcohol. He is a very cunning thief and dresses up in different colored clothes so that we shall not know what he really looks like.

Sometimes he wants to be called Cider, and tells Taste he would not hurt a fly. Sometimes he wears a brownish yellow suit and says his name is Root Beer. Way out in California he pretends to belong to the Grape family, and thinks he is just as good as the lovely bunches of fruit that we are all so fond of and that are so good for us to eat.

But we know better. We know that Mr. Alcohol is always a robber, and if he once gets by our little watchman, Taste, he will be likely to take away everything we value and leave us poor in body as well as in purse. So we will take good care that Taste knows such robbers every time he sees them, and always keeps them at a safe distance.

AUTHORITATIVE QUOTATIONS

THE SENSE OF TASTE

The sense of taste is a very important one. It gives pleasure and also warns us against foods which may be injurious. But taste is not equally distributed over the whole tongue alike. The tip of the tongue is concerned mainly with pungent and acid tastes; the middle portion is sensitive chiefly to sweets and bitters; while the back or lower portion confines itself almost ex-

clusively to the flavors of roast meats, butter, oils and other rich and fatty substances. There are very good reasons for this subdivision of faculties in the tongue, the object being, as it were, to make each piece of food undergo three separate examinations, which must be successively passed before it is admitted into full participation in the human economy. The first examination gets rid at once of substances which would be actively and immediately destructive to the very tissues of the mouth and body; the second discriminates between poisonous and chemically harmless food-stuffs; and the third merely decides the minor question whether the particular food is likely to prove then and there wholesome or indigestible to the particular person. The sense of taste proceeds, in fact, upon the principle of gradual selection and elimination; it refuses first what is positively destructive, next what is more remotely deleterious, and finally what is only undesirable or over luscious.—*Notes Concerning Health*, by M. L. HOLBROOK, M. D.

EFFECT OF ALCOHOL ON SPECIAL SENSES

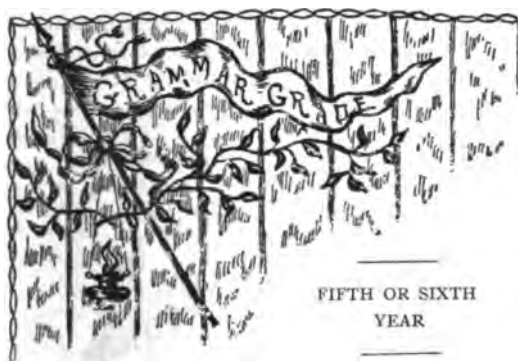
Careful observers have noted, before and after the use of alcohol, the condition of the senses, and in all cases a diminution in acuteness and activity was observed. While a man may believe that his senses are keener and his powers of endurance greater, careful experiments with instruments of precision have shown that his hearing is reduced, his acuity of vision is lowered, his taste obtunded, his sense of smell blunted and his sense of strength, as shown by the dynamometer, materially reduced.—A. D. McCONACHIE, M. D.

ALCOHOL AND TASTE

Alcohol tells us at once that it is bad for us; yet we manage so to dress it up with flavoring matters and dilute it with water that we overlook the fiery character of the spirit itself. But that alcohol is in itself a bad thing has been so demonstrated in the history of mankind that it hardly needs any further proof. Taste tells us it has no place in our systems.—M. L. HOLBROOK, M. D.

EFFECT OF TOBACCO UPON TASTE

The effect produced upon the tender papillae of the tongue by the nicotine-loaded juices and the acrid smoke tends to impair the delicate sensibility of the entire surface. The keen appreciation of fine flavors is destroyed. The once clear and enjoyable tastes of simple objects become dull and vapid; thus highly spiced and seasoned articles are in demand, and then follows continued indigestion with all its suffering.—ALBERT F. BLANCHARD, M. D.



DEVELOPMENT OF THE MUSCULAR SYSTEM

IN his letter to the Corinthians St. Paul declared that "every man who striveth for the mastery is temperate in all things."

Throughout the world's history, until within the last few decades, the danger in alcoholic drinks has been thought to lie only in their abuse. Taken in moderate quantities they have been held to promote health of body and vigor of mind.

But this is a scientific age, one which deals in facts rather than theories, and its investigations show conclusively that intoxicants in *any* amount are useless as strength-givers, that their only mission is to cheat and degrade.

"Power has its price, and its price is straight effort." The winners of the twentieth century will be the boys and girls who know the strength which lies in well trained intellects and clean, healthy bodies, and who are willing to pay the price of right living in order to make it their own.

Abstinence from aught which has the power to hinder man's work or his progress to higher things, not a temperance which would dally with evil and then seek to avoid its consequences, should be the watchword of the new century. It will be if we teach the sixteen million children in our schools aright.

THE MACHINERY WHICH MOVES THE BODY

Somewhere in the vicinity of every school-room there is sure to be machinery of one kind or another in use. This may be a mill, a factory, a locomotive, or a steam thrasher. Whatever it is, take some opportunity to visit it with your pupils before taking up this topic.

Ask the operator in charge to explain its different parts and workings; to tell why some portions of the machinery are very large and others so small as to be almost invisible; to show where the power comes from which moves the machinery, and what is accomplished by its motion.

Call attention to the perfect order in which such machinery is kept. No dust is allowed to gather on it, some one is continually oiling the different parts, and all the metal workings are as bright and shining as if just from the factory. Why is all this care taken? What would be the effect on its work if such machinery were neglected?

Sum up in the classroom the results of this visit. It will give plenty to talk about for one lesson. Then develop the thought that motion is always caused by machinery of some kind. But we can walk, run, and move from place to place. Where is the body machinery? What is it made of? What sets it in motion?

Take up these questions one at a time. Study a chart of the muscular system with the class, noticing especially the different sizes and shapes of muscles. Let the pupils make drawings of these and be ready to show how each is exactly suited to the particular work it has to do.

Locate on the body the most important muscles and find what each does. Contrast the size of the upper arm muscles with those of the fingers, and find the reason. Examine the tendon in a chicken's leg. Where do we find tendons used in place of muscle? Why?

Examine the muscle in a piece of well boiled beef. Why are each fiber and bundle of fibers in a membrane case? Find whether each of these fibers moves separately or whether the muscle always moves as a whole? Which would be the better way? Why?

Sometimes water power is used to move machinery, sometimes the power comes from steam or gasoline or electricity. What is it that moves the muscles? Let the class find out for themselves that this power comes from the nervous system, and that the muscles are the brain's servants, just as the senses are the brain's teachers, moving or stopping just as the message comes to them over the nerves.

THE VALUE OF WELL DEVELOPED MUSCLES

One reason why American manufacturers are surpassing those of other lands is that they will have none but first class tools to work with. As soon as a better machine than the one they have appears in the market, they get it and send the old one to the junk shop.

We can not do this with the machinery of the body. Each person has one set of muscles and only one to last his life time, so all that can be done is to make the most of this.

How much are well developed muscles worth to a person? What are they worth to the football player? to the policeman? the firemen? the farmer?

Explain that the best developed muscles are

not necessarily the largest or strongest, but rather those which are best fitted for what is required of them, just as any piece of machinery is valuable if it is exactly suited to the work it has to do, and worthless if it is not.

Show that the condition of a person's muscles has much to do with his health as well as with his work or play. When the muscles are used the blood circulates faster, bringing more nourishment to every part and carrying away the waste. Why is this the case? How does exercise mean more oxygen for the body? What difference would this make in one's health?

If both health and success in play or work depends so largely on the condition of the body machinery, the next thing to find out is

HOW THE MUSCLES MAY BE DEVELOPED

Find how the engineer gets the best work out of his engine. He sees that every part is oiled, that the firebox is constantly supplied with coal, and that the drafts are open to let in plenty of oxygen.

How far must we follow the same course in order to get well developed muscle? Coal is of no use here, but the muscles must still be fed. Find the best kinds of food for them, the kinds which build up muscle tissue, and those which make the muscles strong to act. Have the class make lists of both these classes of food, and decide whether what they are eating for breakfast, dinner and supper is feeding their muscles properly.

One requirement of the muscles is the same as that of the engine, what is it? Why do the muscles need a good supply of oxygen? How do they get it? What harm would be done if they were deprived of as much as they need?

The engineer makes every part of his engine run smoothly and easily by oiling it. Show that the muscles are a much more perfect machine because they oil themselves as they work, while the more exercise they get, if this is not too severe, the more deft and supple they become.

Let the pupils think for themselves how a person's work decides which of his muscles are to be the best trained and most useful. Name classes of people that will have dextrous hands; strong chest muscles; well developed arms; muscular legs.

Decide what would be the effect on a person's health if he cultivated one set of muscles extravagantly and others very little or not at all. How would such one-sided development show itself in his looks and in the appearance of his body?

Emphasize the importance of complete muscular development, and show how the exercises necessary to secure it must differ according to

the life one leads and the work he habitually does. Explain also why light exercise taken over and over again gives better results than more violent exercises taken seldom.

EFFECT OF ALCOHOL AND TOBACCO ON MUSCULAR DEVELOPMENT

Bring two plants into the schoolroom and place in the same window. Let them be of the same size and equally thrifty. Sprinkle one with water every day and the other with alcohol. At the end of a week notice the changes which have taken place. Which plant is now in better condition? Why?

Perform the same experiment on another plant, but using beer. What is the result in this case? Why is this plant in better condition at the end of a week than the one which was given clear alcohol? Continue the experiment longer and learn whether the final result is the same in both cases.

Alcoholic drinks are clearly bad for plants. Do they have a similar effect upon human muscle? Send the class to their text-books to find out. Notice first the effect on muscle texture. How does fat differ from muscle?

Show that one's power of motion lies entirely in his muscles. These move the bones, the mouth, the eyeballs and every part of the body. Fat has no power to move. What, then, is the effect upon one's activities if he allows his muscle to be changed to fat by using alcoholic drinks?

Many experiments have been made to show the effect of alcohol on muscular work. What is the unanimous verdict? Think of reasons why this result is inevitable.

Find what muscles suffer most from the effects of tobacco, and in what two ways their usefulness is impaired by its use. Explain how tobacco can make the hands tremble. How does it hurt the heart? Why are boys who smoke cigarettes uniformly lazy?

In summing up the effects of both alcohol and tobacco upon the muscular system dwell on the thought that neither of these poisons can be used without leaving scars. One may smoke or drink and still live to old age, just as a glass may be nicked and cracked and yet hold together. But nobody wants a cracked dish if he can have a whole one, nor is there the same chance in the world for the man who has abused his powers as for him whose soul and body are strong and clean.

From the same material, one man builds a palace and another a hovel. From the same rough piece of marble, one man calls out an angel of beauty which delights every beholder, another a hideous monster which demoralizes every one who sees it.—*Success*.

AUTHORITATIVE QUOTATIONS

CONDITIONS OF HEALTH FOR WORKING MUSCLE

In the muscle itself, contraction produces heat, work and certain chemical and electrical reactions. There is a greater flow of blood to the working muscle; absorption of oxygen and nutritive material is increased; tissue change and the formation of waste are accelerated. Muscular irritability is lowered by diminishing the local supply of oxygen, by admitting certain toxic substances to the blood, and by repeated stimulation. The conditions of health for a working muscle are therefore "a full supply of proper food and oxygen, unimpeded and sufficient drainage, and rest at due intervals." (Hartwell) HENRY LING TAYLOR, M. D.

EXERCISES IN PHYSICAL CULTURE

Practice front arm exercises and respiration combined, with vigor and effort according to your strength and ability for the space of three to ten minutes three to six times a day.

First :

Stand in correct position, fully inflate the lungs as you slowly raise the arms from the sides to the vertical, touching thumbs or backs of hands

over head, and exhale as the arms descend.

Second: Draw back arms from front horizontal, with palms up, until the elbows are as far past the sides of the body as possible, the elbows being kept close to the body. Inhale as you draw arms back, exhale as you return to position. Repeat this movement four to ten times. The last time, when elbows are back, slap chest closely and quickly fifteen to twenty times.

Third: Slowly raise arms from side forward, fingers straight out, until the palms meet in front of forehead, fully inflating the lungs all the while. Then hold the breath until the largest possible circles are completed by both arms moving symmetrically over backward to position. Exhale and repeat four to ten times.—CHAS. DENISON, A. M., M. D.

ALCOHOLIC DRINKS DO NOT PROMOTE ATHLETIC SUCCESS

There is superabundant evidence that alco-

holic drinks do not promote athletic success, to put it mildly. On the contrary, they handicap a man most seriously, and, other things being equal, the teetotaler will always have the better chance.—*Medical Temperance Review*.

ALCOHOL LESSENS MUSCULAR POWER

The disadvantageous effect of alcohol on persons performing muscular work is well known, and the evidence is overwhelming that alcohol in small amounts has a most deleterious effect on voluntary muscular work.—VICTOR HORSLEY, in Lees and Rapier Memorial Lecture.

TOBACCO LOWERS WORKING ABILITY

The fact has been brought out by Mr. S. A. Delabarre of Amherst College that tobacco smoking has a decidedly deleterious effect upon the rate and percentage of physical development in students. In weight non-smokers gained 24 per cent over smokers; in height 37 per cent, and in chest girth 42 per cent.—



"All the stars that over-sprinkle the blue heavens seem to twinkle With a crystalline delight."

GEORGE H. ROHE, M. D., Professor of Therapeutics, Hygiene and Mental Diseases in the College of Physicians and Surgeons, Baltimore.

ADVANTAGE OF NON-INTOXICATING DRINK IN HARD WORK

All medical authorities are agreed that in periods of prolonged physical labor, more and better work will be done by men who slake their thirst on non-intoxicating drinks than by those who drink large quantities of beer.—*British Medical Journal*.

ALCOHOL TENDS TO DIMINISH THE TOTAL AMOUNT OF WORK DONE

One writer, Dr. Rolleston, puts the metabolism question in a nutshell. Summarising Park's experiments he says: "The experience gained from long marches of troops is that the use of alcohol tends to diminish the total amount of work done. It may enable a man to spurt but not to stay—it is dissipative rather than conservative of energy."—G. SIMS WOODHEAD, M. A., M. D., Professor of Pathology in the University at Cambridge.

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"The corridors of time
Are full of doors—the portals of closed years,
But one door stands ajar—
The New Year's; while a golden chain of days
Holds it half shut."

WRONG IDEAS CORRECTED

IS THERE TOO MUCH TEMPERANCE MATTER IN
THE TEXT-BOOKS

THE statement is sometimes made that the indorsed school physiologies give too much space to the temperance matter. If this is true, is there any topic under which the temperance matter can be left out; can all temperance matter be massed in one chapter and omitted from the rest of the book; or can the present space devoted to alcohol and narcotics be condensed? Let us consider these three propositions in turn.

SHALL THE TEMPERANCE MATTER BE LEFT OUT OF
ANY TOPIC

THE BONY FRAMEWORK

Reputable scientific authorities testify that alcohol and tobacco used during the period of growth tend to dwarf the human stature, or, used later in life, to weaken the recuperative powers of the bony system, thus retarding or even preventing the formation of new bony material in cases of broken or shattered bones. Every child desires a well-formed body. Shall we omit these facts from the books and thus leave the child in the midst of temptations to drink and smoke, unwarned of the natural consequences to his future growth?

THE MUSCULAR SYSTEM AND WORKING ABILITY

Take the muscular system. It has been proved experimentally in scientific laboratories, and on a large scale with armies and companies of laboring men, that tobacco and alcoholic drinks weaken the strength and endurance of the muscles. But these facts are not univer-

sally known. Moreover, the opposite erroneous opinion, that alcoholic drinks strengthen one and better enable him to endure hardships, is very prevalent. Only a few years ago a college professor (Lombard), who was making some experiments on the strength and endurance of the muscles, was greatly surprised to find a remarkable decrease of ability after he began to smoke a cigar. He had previously supposed that he could work better while smoking.* Shall we erase these facts from the pages of our school text-books and confine them to the archives of medical libraries, where the people would never find them? It has been stated recently by the dean of one of our industrial colleges, who has been studying the industrial problem both at home and abroad, that one factor in the present commercial supremacy of this country is "the American tendency to apply knowledge as soon as acquired." The indorsed school physiologies are now carrying to millions of children all over this country the facts concerning the effects of alcoholic drinks and tobacco on muscular working ability which have been wrought out by scientific experiment, largely within the past decade, and which, but for this practical application, would be reposing in dust-covered volumes on the shelves of medical libraries. Furthermore, it is the testimony of expert students of the causes of our present industrial leadership that the greater sobriety of the American workman is a very large factor in his greater efficiency over the European workman. The reason for this is seen in the dissemination through the schools, and the immediate application, in the industries, of the knowledge of the effects of alcoholic beverages and other narcotics upon working ability.

Shall we now reverse the policy which has brought such telling results, eliminate these truths from our physiologies, and let the coming American generations grow up uninformed or misinformed, as chance may decide?

FOOD

One of the most important chapters in the school physiologies is that devoted to food which is the source of energy for mental and muscular work. The most perfect engine placed in the hands of an engineer who knew nothing of the nature of fuels would be as little likely to attain the limit of its possibility as the best human machine subjected to an ignorant caterer. The indorsed physiologies teach with the greatest possible exactness the true nature of the materials which men commonly use as foods, and point out definitely and in accordance with the most decisive proofs of exact modern science the qualities that are lacking in

*Journal of Physiology, Vol. 12, 1892

certain other substances which have been supposed to be foods, but are not.

"One of the most fatal errors of science," says Professor Kassowitz of the University of Vienna, "is the idea that alcohol is a food." That idea is common among the people. Step by step for nearly half a century science has slowly but surely divested alcohol of every last claim and every shadow of a claim to a food value.

Recently some who have not kept fully acquainted with this literature have charged falsely that the question is not yet settled, and that therefore the subject should be kept out of the school physiologies. But meanwhile the disproved errors of the earlier experimenters are being promulgated through the newspapers and popular magazines. Shall the evidence which corrects these errors be allowed to lie on the shelves of the medical libraries, or shall it be given to the children, with full references to the authorities which any one who doubts may go and consult? As long as human belief influences human action, and knowledge decides belief, whoever advocates the withholding of the established facts in this matter from the young is as much a traitor to his country as was Benedict Arnold.

DIGESTION

Next to the subject of food comes digestion. It has long been held and is still taught by some belated or prejudiced physicians that alcoholic drinks are an aid to digestion. This notion has been disproved by the most careful experimentation. Shall we leave this evidence out of our physiologies and allow our future generations to become easy victims to the alcohol habit through the popular erroneous notion that it aids digestion?

Following the digestion of food comes its conversion into blood and the transportation of the blood to every part of the organism. The heart is the propelling engine. Medical literature contains constantly accumulating evidence of the injurious influence of tobacco and alcoholic drinks upon the heart. "Tobacco heart" rules many applicants out of the naval and military service of their country, and unfits them

for many other promising careers. Shall we omit these facts from the school literature and leave our youth to learn from the school of experience, when too late, what they might have been?

RESPIRATORY ORGANS

Energy for warmth and work is derived from the oxidation or burning of food materials in the tissues. The oxygen necessary for this burning is carried into the body by the respiratory organs. Careful study of tuberculosis of the lungs during the last few years has revealed such a close connection between consumption and alcoholic habits that "Alcoholism and Tuberculosis" frequently stand together in the title of articles in medical literature. Only a few years ago alcohol was advocated by superficial observers in the medical profession as a cure for consumption. It is now a common lay prescription for a cold. Shall the evidence that alcohol predisposes the membranes of the respiratory organs to attacks of cold, makes them more susceptible to the germs of consumption, and weakens the powers of resistance against this disease be withheld from the children who are studying physiology?



"A Happy New Year!" cries young January:
"I'm coming! I'm here! let all hearts be merry."

ORGANS OF EXCRETION

However well the engineer may feed his engine with fuel, if he allows it to become clogged with ashes its power will diminish accordingly. The human body affords a parallel. Alcohol often causes diseases of the kidneys or of other organs concerned in the elimination of waste which quickly derange the human engine. Shall we leave out of our physiologies the evidence science has accumulated in this subject?

THE NERVOUS SYSTEM

The human nervous system differentiates man from the brute creation, covers the surface of the earth with the products of his constructive power, harnesses the forces of nature to the car of his audacious purposes, and even aspires to think God's thoughts after Him. This, the almost divine part of the human system, the last attainment in the millenniums of evolution,

is the most susceptible to the influence of alcoholic drinks and narcotics. Here the evidence of their action in small amounts is first detected by the weakening of that self-control through which man becomes the master of circumstances. Here lies the secret of that power gained by the alcoholic appetite which has caused the fall of some of the noblest specimens of the human race.

The injurious effects of large quantities have long been recognized. They have furnished the text for exhortations to moderation since the days of Noah. But evidence of injurious effects of small quantities, beyond the fact that they tended to the formation of the alcoholic appetite, has been obtained almost entirely during the last ten years. It has been secured through the most exhaustive and painstaking observation of the effects of alcohol on the higher mental operations, conducted by trained specialists in the psychological laboratories of renowned universities. Shall the results of these investigations be withheld from the young whose tastes, opinions and habits are now in process of formation? Shall this knowledge be erased from our school physiologies?

THE ORGANS OF SPECIAL SENSE

A part of the effects of narcotics upon the nervous system is its effect on the organs of special sense, the media through which the mind is made acquainted with its environment. Shall we withhold knowledge of the fact that these organs may be made less efficient by the use of alcohol and other narcotics?

But there is still another line of truths needed to correct popular misconceptions which encourage the formation of the drink habit.

FERMENTATION

Fruits are healthful, a necessary part of man's diet. He has a natural appetite for them which has natural limits. Why is not the juice of these fruits when extracted and allowed to ferment equally healthful? To answer this question correctly one must understand the changes that take place during the process of alcoholic fermentation, the natural causes producing them, the nature of the resulting substances, the popular alcoholic drinks. One must know also the nature of the alcohol which makes these liquors injurious to the human system when used as beverages. This knowledge exists in the archives of science. Shall we not, according to our American tendency, continue to give in our school physiologies practical application of this knowledge to one of the most vital questions of individual and social welfare, rather than meekly to forsake our evident duty because some who have given little

or no constructive thought to this great problem meet us with the vague objection that we are giving too much space to the temperance matter?

Science, logic and experience all unite in demonstrating that established facts concerning the nature of alcoholic drinks and other narcotics, together with their effects upon the human system, have a rightful place in all physiologies to be studied by the young, and that, too, in connection with each phase of the subject. To omit such facts from a single topic is by so much to rob the child of knowledge which is his due and which might prove his stay in time of temptation.

SHALL THE TEMPERANCE MATTER BE MASSED IN ONE CHAPTER

The plea is made that all temperance matter should be massed in one chapter. If we yield to this suggestion we sacrifice logical sequence and often the temperance matter itself. When the child is studying the structure and function of his muscles, and his interest and enthusiasm are already kindled at the thought of what he can do with these organs, then is the time to study the hygiene of the same; to learn how the muscles are to be cared for and trained, and what may impair their usefulness. The influence of alcohol and tobacco is thus a logical part of hygiene. There is no sound reason for divorcing them and putting the temperance matter into a separate chapter, where it can be conveniently omitted, but, on the contrary, there is every reason for retaining it in connection with each topic.

Furthermore, if all temperance matter is massed in a single chapter at the end of the book, there is every probability that it will be hurried over perfunctorily or neglected altogether. In any case the golden moment of the child's interest has passed, and it has passed unimproved.

SHALL LESS SPACE BE GIVEN TO THE TEMPERANCE MATTER

But can not all necessary temperance matter be given in less proportionate space? To answer this question one must first compute the amount of physiology that is needed in each successive grade of the school course, and then compute the proportion required for clear statement of the facts of the temperance matter that are appropriate to the same respective grades. The best efforts of experience, trained skill and conscientious scruple concerning the omission of necessary truths have found that about one-fifth of the text of the systematically arranged and carefully graded school physiology is required for such a presentation of this topic.

Greater condensation would sacrifice the illustrations and development that are necessary to clear understanding and forcible impression. In such case the teaching becomes dogmatic assertion instead of the logical presentation of reasons for the truth asserted. Such a systematic arrangement as is followed in the indorsed books avoids the wearisome and unwarranted repetition of a few truths and the omission of others which result from unsystematic, haphazard teaching, the kind of teaching which necessarily brings the subject into disrepute wherever it is practiced.

The conservative study of the sociological side of the alcohol question has found the beverage use of alcoholic drinks a first cause in the thirty-one per cent of the crime represented in prisons and reformatories, excluding all minor penal institutions and criminal courts; a direct cause of thirty-seven per cent of the poverty found in almshouses, excluding the incalculable amount of poverty which escapes these institutions; and a direct cause of forty-six per cent of the deserted children. Such facts speak for themselves and show that, in view of the far-reaching effects of the use of alcoholic drinks and other narcotics, one-fifth of the space in our school physiology is not too much to devote to the subject.

In the face of these facts we dare not lower our standard by omitting or further condensing the temperance matter in the text-books. To do so would be to pave the way for many a child to join the ranks of drink victims and to shut out the strength of his young manhood from the support of his country and her institutions.

—MARY H. HUNT.

PHYSIOLOGY IN ILLINOIS

"MY little grandson has just been to visit me," said an Illinois woman. "His father put him on the train and he took the journey all by himself, although he is only in the third grade in school.

"He had hardly arrived when he ran out to the orchard with his grandfather.

" 'Oh, what lots and lots of apples!' he exclaimed in delight. 'I hope you are not going to make them into cider, grandpa!'

" 'No,' was the reply. 'These apples are for the market. They will be packed in barrels and sent East for little boys and girls to eat and to be made into pies and apple sauce.'

" 'That's good,' said the child. 'My physiology says cider is bad for people and makes them cross. I'm glad my grandpa doesn't make it.'

"Later in the day this small apostle of temperance was found seated on the doorstep watching the man of all work clean up the walks.

" 'Don't you know that tobacco will hurt your brain and heart?' said the boy as the man took out his pipe and began to fill it. 'I know it does because my physiology says so. I wish you wouldn't use it any more.'

"The next morning I was the one to be instructed. When my boy came down to breakfast he said, to me, 'Please don't go up to my room for twenty minutes, grandma.'

" 'Why not?' I asked in surprise.

" 'Oh, you'll see by and by,' he said with a wise little look.

"When the twenty minutes were up I went to his room. Windows were wide open, sheets and blankets were hung separately around the

room, and the mattress was turned up to air.

"I put the room to rights and went down.

" 'Well, grandma, did you find why I didn't want you to go up for twenty minutes?' he asked. 'It was because a bed has to be aired after it has been slept in. You have to hang up the bed clothes separately and open the windows so that the oxygen can get into them.' "

"Physiology is doing a good deal for that boy," I remarked.

"Yes, and for thousands like him in our state," said my informant.

Thomas A. Edison, the great electrician, to the inquiry if he were a total abstainer, answered "Yes." And when asked why, replied, "It is because I always feel I have a better use for my head."



A small apostle of temperance

CHILDREN OF MANY COUNTRIES

V. JAPAN

CHILDREN in Japan are very tenderly cared for by their families. When a child is born congratulations come to his family from all friends. Even the government used to congratulate a family who had seven children, giving it some money, but not now; however, the same spirit is still among us. Persons over seventy years old are also congratulated for good age, and they have honor and praise increasing every year. When a person becomes seventy-seven or eighty-eight years old, the family with all his friends give a feast, and wish he may live many, many years more.

On the third day after the birth of a child the family gives a good dinner, but not with so many nice things as at a Thanksgiving dinner in America, as I remember it in New York City, in 1886. Likewise, we have a big dinner on the seventh day after a child's birth, as the seventh feast. The thirty-first day after birth is appointed for a girl child to make a visit to the local temple, for thanksgiving in the past and to ask blessing and prosperity in the future. In the same way, the thirty-third day after birth is for a boy child to go to a temple. When they go to the temples, the people dress most beautifully, decorating with flowers. They carry many offerings to the temple; among them is always found a wooden dog which indicates watchfulness and faithfulness.

On the one hundred and twentieth day after birth, the commencement of eating is celebrated. Of course, a baby can not eat anything but milk, then. Yet, on this day the ceremonial form of eating is observed. If a child is a boy, he should sit on the left knee of his father, and a girl should be placed on her mother's left knee. Women wait on the baby girl, men on the baby boy.

The mere forms of ceremony in Japan are rather decaying. Yet, even at this day we find many old Japanese fashions; many of them are foolish and some of them are very good, useful and important, not only to us but also to the whole world.

Children in Japan, as well as in America and Europe, love their parents very much and like to be with them. As soon as a child can speak

he is taught to say, "*Arigato*," that is, "Thank you;" "*Ohio*," that is, "Good morning;" "*Konban*," or "Good evening." A child is also taught how to bow.

When a child receives any present whatever, however small it may be, he should never put forward one hand, but receive it in both hands, one upon the other at right angles and raising it to his head say "*Arigato!*" When a child gets a present he always reports it to his mother. When she sees the giver's family, she thanks them kindly.

Japanese children love and respect their teachers almost as much as they do their parents, and they are obedient to all older people. There are distinct annual holidays for boys and girls. The third of March is the annual holiday for girls. The day is called the doll festivity. On this day girls receive presents of dolls from mothers, sisters, cousins and friends. So the little girls have plenty of dolls. The dolls are



Morning study is excellent for the memory

very beautiful and are dressed in the richest silk of the prettiest style. They are yearly exhibited on the doll festival, and are nicely kept year after year, even after the owner marries. The fifth of May is the boys' annual holiday. The day is called the flag festivity. The flags are richly embroidered with the family symbol.

The Japanese children used to get up very early in the morning, even before the sun rose, and go to school for reading. This was the work before breakfast, when I was a little boy nine years old. I remember one of my friends often coming to our door and calling me for school while the morning star was still brightly shining. At school in the winter time, though it is very cold, we have no stove at all, but a little ash box in which is made a charcoal fire. We warm our hands only and then sit down to our studies. The morning study is excellent for the memory, and health, too. But the system has lately been changed to the American style, as we now have public schools, like those in America and in some other nations. Public schools are found everywhere, and the course of study is well regulated.

In Japan there are smart children like Anglo-Saxon children. A little boy in Tokio, named Musuo Sudzuki, whom I knew very well, when he was only eight years of age learned English as quickly as he did the Japanese

language. One day his aunt asked him, "Masuo, how can you so well remember such a strange language?"

"I do not expect to meet the same thing again, so I must remember as much as I can when I have first seen and heard it," was the boy's reply.

Children go to the kindergarten, for this system has been adopted all over Japan. At the age of six years they commence the public school, and dress in Japanese or European style, as they please. But when they are promoted to the high school they must wear European uniform. They use wooden guns in the gymnastic exercises. Fencing exercises are also adopted for recess hour. Boys and girls go to the same public schools; but girls are not admitted to the college.

"For centuries the only education a Japanese girl received was at the hands of her mother. The greatest care and heaviest burden of life was the arrangement of her hair and how to preserve it unruffled. To accomplish the latter the Japanese woman sacrificed the comforts of a feather pillow and adopted a wooden one, discomfort being no consideration when the matter of disarranged hair was concerned.

"With most elaborate arrangement of hair, dressed in a many colored gown, knowing something of sewing, a little of housekeeping, and with some knowledge of music, a girl looked forward to nothing but marriage. But when the light of western civilization shone upon the land, with the establishment first of mission, then of government schools, girls found part and lot in the schoolroom." *

Children, while they are still very young, are taught the teaching of Ogasawara or family service. This teaching numbers one hundred articles, but I will here state but a few of them:

1. Wash your hands when you meet persons.
2. Comb your hair when you meet persons.
3. Put your coat on when you meet persons.

* Miss Ackermann in the *Union signal*

4. Go quickly to meet him when a guest comes to the door.

5. Do not walk drawing your shoes on the floor.

6. Do not speak loudly before ladies and gentlemen.

7. Do not speak putting your hands in the pockets.

8. Do not put your feet on the stove or Kotatsu.

9. Do not give advice to old persons.

10. Do not touch the desk while a person writes.

11. Be quiet while a person sleeps in the house.

12. Do not talk of another person's mistakes.

13. Do not speak to one while he is talking with another person.

14. Give thanks before you eat.

15. Do not leave your seat during dinner.

16. Write letters in a readable hand.

17. Be not proud to the poor.

18. Wash your teeth while you are alone and not use a tooth stick before men.

19. Never go to the wine place.

—SHO NEMOTO, in *Child Life Abroad*.



The heaviest burden of life is the arrangement of her hair and how to preserve it unruffled.**

SCHOOLS IN PORTO RICO

THE growth of the public school system in Porto Rico since the island

territory came into the possession of the United States has been truly marvelous. Spain had a few schools—only in terms—while there are now 1,000. The value of the permanent equipment, effected in six months, is \$265,000. There has been appropriated for the schools for the current year \$500,000, one-fourth of the insular revenues. The good work in Porto Rico is largely due to M. G. Brumbaugh, commissioner of education.

—*Educational Gazette*.

**We are indebted to the courtesy of the *Union Signal* for the two illustrations of Japan life which appear in connection with this article.

BOOK NOTICES

THE SOUTH AMERICAN REPUBLICS, by W. Fisher Markwick, D. D., and William A. Smith, M. A. Price 60 cents. Silver, Burdett and Company, New York.

This book is tenth in a series of readers entitled "The World and its People," prepared to supplement the study of geography and history. The series is carefully graded from primary to high school work and promises to prove of educational value.

In this last volume the story of the South American Republics is told. It gives interesting pictures of present day life in these southern countries which at present are more unreal to the average American than any European country. In addition, a brief historical sketch is drawn of each state, showing its beginnings and the political changes through which it has passed. Copious illustrations add to the interest of the book.

THE STRENGTH OF BEING CLEAN, by David Starr Jordan, LL. D., President of Leland Stanford Jr. University. L. C. Page & Company, Boston.

Originally delivered as a Red Cross address, this book constitutes a plea for sound and sober life which every young man and woman should read. The dominant thought is that no one can secure happiness without earning it, that each acquisition has its price. The various short cuts to happiness are stripped of all glamour and shown in their true light, while on the other hand the reader feels already the glow of strength which comes from honest effort and is impelled to action.

There is nothing which more strongly aids the development of our powers than standing firm and unswerving through a storm of criticism, when we know we have chosen the right pathway, and that our motive is a worthy one, however questionable the course may seem to observers. It is impossible to pass through such an experience without keen suffering until we rise to heights of spiritual serenity, which few of us attain in youth; but suffering is another source of development.—*Success*.

PHYSIOLOGY TOPICS FOR JANUARY

PRIMARY—Food. Water. Fruits and their Uses. Sense of Taste. Alcoholic Drinks; Beer, Wine, Cider.

INTERMEDIATE.—Tobacco. Skin and Bathing. Digestion. Assimilation. Muscles.

ADVANCED—Food. Digestion. Circulatory System.

WHO LOVES THE TREES BEST

Who loves the trees best?

"I," said the Spring.

"Their leaves so beautiful
To them I bring."

Who loves the trees best?

"I," Summer said.

"I give them blossoms,
White, yellow, red."

Who loves the trees best?

"I," said the Fall.

"I give luscious fruits,
Bright tints to all."

Who loves the trees best?

"I love them best,"

Harsh Winter answered.

"I give them rest."

Alice May Douglas.

THE FROSTED PANE

One night came Winter noiselessly, and leaned
Against my window-pane,
In the deep stillness of his heart convened
The ghosts of all his slain.

Leaves, and ephemera, and stars of earth,
And fugitives of grass,—

White spirits loosed from bonds of mortal birth,
He drew them on the glass.

Chas. G. D. Roberts.

WHY GRACE WAS OMITTED

A tiny girl of seven gave a dinner party the other day, for which twelve covers were laid, and that number of small maidens sat down to dine. It was a real little girls' dinner, and the little hostess herself presided, sitting at the head of the table. She had been very anxious in looking forward to it, to do everything as it should be done.

"Mamma," she asked, "shall we say grace?"

"No," said mamma, "it will be a very informal dinner, and I think you need not do that."

That meant one ceremony the less to be gone through, and was a relief. But the little lady was anxious to have all her guests understand it. So, as they gathered around the table, she explained:

"Mamma says that this is such an infernal dinner that we need not have grace today!"

—*Baltimore Sun*.

Clergyman (examining a Sunday school class)
—"Now can any of you tell me what are sins of omission?"

Small scholar—"Please, sir, they're sins you ought to have committed, and haven't."—*Motherhood*.

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No. 6



SUCCESS

"With comrade Duty, in the dark or day,
To follow Truth—wherever it may lead;
To hate all meanness, cowardice or greed;
To look for beauty under common clay;
Our orothers' burdens sharing when they weep,
But, if we fall, to bear defeat alone;
To live in hearts that loved us, when we're gone
Beyond the twilight (till the morning break!) to sleep—

That is Success!"

HOLIDAY RAMBLES ON BRITISH SOIL

IF one has but limited time to visit the mother country, the bicycle is his best friend in favorable weather. With it he is carried at once into the heart of things and to the homes of the people, for the travel-stained wheelman naturally avoids pretentious hotels.

We speak from experience, for all our winter's work has been brightened by the delightful recollections of just such a holiday in the British Isles. Long before this we have promised ourselves the pleasure of sharing some of these experiences with JOURNAL readers, but more pressing issues have claimed our space.

Wales is too often omitted from the itinerary of the hasty traveller, to his distinct loss, if he but knew it. Perhaps we too should have passed its charms by had we not set apart a week to go "ancestoring," a search rewarded by finding the home of our forefathers, a stately old-fashioned mansion, part of whose towers antedate the Norman conquest.

All the way from Chester, the gateway to North Wales, the country is one continual surprise and delight, a panorama of wild loveliness; forest-clad hills, rugged mountain passes interrupted by gorges, shimmering lakes, and winding in and out among them all mile upon mile of perfect road. Hardly second in interest, to

our foreign eyes, were the peasant villages dotting our path. One needs but a glance at the neat, white-washed houses and fences, the shining slate roofs, relieved from bareness by the rose trees clambering to the very chimney, to know the characteristic virtues of this people.

Modern civilization has stamped out much of the quaint simplicity of Welsh life. But there are still retreats where old-fashioned gowns and old-fashioned ways obtain. No matter how primitive the cottager or how humble the abode, the stone flagging is always freshly scrubbed and the whole interior shines with cleanliness. If there is but one room, it is sure to contain a fine old dresser with its little store of brass and china handed down through many generations, and many another precious relic. Poverty is manifest, but it is eminently self-respecting.

In sharp contrast were the peasant homes of Scotland which we visited. With these as a standard, one is almost driven to the conclusion that cleanliness is superlative in Wales, comparative in England, and positively lacking in Scotland. In one entire village of the last named country, not a woman did we see, as we rode through the long main street, in conventional attire. All were unkempt and dirty to an extraordinary degree, and either barefooted, or perhaps shod with one shoe and one rubber, or some other odd combination of footwear.

Independence in Scotland is almost American in its expression, and the same spirit which animated Jenny Geddes, when she emphasized the protest of her countrymen against the introduction of the English liturgy into Scotland by throwing her folding stool at the head of the officiating bishop, is abroad in the land today. One does not need a map to tell when he has crossed the Scottish border. He knows it when the downcast eyes and respectful "Yes, Miss," and "No, Miss," give place to the frank stare and blunt "Yes" and "No."

When one gets as far as Anglesea even the beggars are polite. It was there we were accosted by a burly tramp of most repulsive mien, and asked for alms. On being told that we had nothing for him he responded, with a second courtly obeisance, "Thank you kindly all the same, Miss." At which, in sheer amazement, we were near turning back to reward such fine manners.

The obliging spirit of the Welsh and English is especially appreciated when one halts for refreshments by the way. On one such occasion, we had stopped at a primitive country inn

and in ordering dinner had called for a glass of milk. Everything else came but the milk did not. Finally, just before our departure, the landlady bustled in with a foaming beaker and explained the delay by saying that it took longer than usual *to catch the cow* this hot weather, as the flies bothered so! There was no thought of demur on her part, if there was on the cow's, at taking so much trouble for one glass of milk at three o'clock in the afternoon.

Scotland was full of surprises, not the least of which was the ride through the Trossachs, perhaps the most romantic glen in the Highlands and certainly the most famous. The very meaning of the word, "bristling," given in all the guide books, fills one with nameless apprehension. In our case this feeling was heightened by the experience of friends two years before. According to their account it always rains in Scotland, it rains hardest in the Trossachs; the wind always blows in that country, and with concentrated fury in this glen. The day their coaching party drove through, neither mackintosh nor umbrella was any protection from the elements. Their hairpins were scattered to the winds and with disheveled and forlorn mien they presented themselves at the magnificent Trossachs Hotel.

Our experience was quite otherwise. During the ten days we spent in Scotland it rained but once, and that in the night. To the last we clung to the idea that the Trossachs would break the charmed spell, but even there the rains neither descended nor did the floods come. Nature wore her sweetest smile and had donned her freshest attire for our benefit, and we still fail to appreciate the meaning of the term.

It was our good fortune to spend a Sunday in a little village of Northamptonshire only seventy miles from London, yet quite unsullied by contact with the fashionable world. Every cottage, even the squire's which boasted some pretensions, was thatched, and the few tiny windows date back to the time when each pane of glass in the kingdom was taxed.

The arrival Saturday night, at sundown, of two unheralded spinsters from a foreign land was more than enough to throw the entire village into excitement. Yet the sensation was hardly equal to that of a friend who visited Epworth about the same time. Learning that a party of Americans was expected there, a peasant woman walked seven miles from a neighboring district to see them. Her disappointment was bitter and irreconcilable when she found them dressed, not in blankets and feathers as she had anticipated, but in ordinary tourist costume.

The British peasant's knowledge of Americans being largely obtained from the characters

of Buffalo Bill's Wild West show and the aboriginal relics in the museum, it is not strange that his ideas on the subject are somewhat hazy. This, no doubt, was the reason why we were asked on one occasion if we could talk so they could not understand us.

"Do you mean in French or German?" my friend asked.

"Oh no, in American," was the reply.

But to return to our little hamlet. The name of the pastor of a large Congregational church in Boston, who years before had grown up in this village, proved an open sesame with these good people and insured their every hospitality. A few minutes, and we were ensconced in one of the most prepossessing of the tiny cottages where every effort was made to entertain us royally. No apologies were made for limitations due to a small house and a large family, and none were needed.

This absence of the apologetic spirit, so much a part of the New England housewife, seems to be characteristic of the British matron, be she Welsh, Scotch, or English. She rejoices in what she has, instead of lamenting what she has not. On one occasion, when the only sleeping accommodation for two was a cot bed of extremely narrow proportions, attention was smilingly called to the clean white sheets with which it was supplied and there the matter ended. Again it was the nice soft water which we were given for bathing, with nothing said about the swarms of polliwogs disporting therein. We thought, as we strained them through the towel, that there might be occasions on which hard water would be preferable, but we kept such ungrateful thoughts to ourselves.

Our village entertainers were devoted members of a dissenting congregation, and the Sunday services in their little chapel were in marked contrast to the stately ritual of the Church of England. The cordial hand clasp and greetings afterward reminded one of little country churches at home.

Still more interesting, and certainly more unique in our experience, was next morning's visit to the parish school. There was nothing which savored of republicanism in the awed and demure expression on every little face as we entered. In spite of close crowding on comfortless benches, often too high for little feet to touch the floor, nobody giggled and nobody whispered.

Bible study is not debarred from English schools as it is so universally in our own land. On the contrary, it is made a prominent feature. Whole chapters of the Bible are memorized by the children in the primary department, to say nothing of hymns and catechisms, and the work is continued through all the grades. The lesson

for the morning was the parable of the Ten Virgins, and, as we entered, one hundred and fifty little tots, with eyes fixed solemnly on their teacher, hands folded in their laps, and heads nodding in time to the rhythmic monotone, were half reciting, half chanting,

"And foive | of them | ware wise,
and folve | ware fewlish."

To a stranger unaccustomed to the Northamptonshire dialect and this method of conducting Bible lessons, it was irresistibly funny, but to the children it was evidently a life and death matter.

The village contained its full share of quaint characters, not least interesting among whom were two maiden sisters of uncertain age, who, though pillars in the church and celebrated makers of what the natives call "pillow-loice," obeyed literally the Biblical injunction "let not thy right hand know what thy left hand doeth."

One illustrated the process of lace-making to the strangers in the parlor while the other answered frequent calls at the kitchen door for beer, ale and porter "not to be drunk on the premises," according to a notice posted conspicuously above the threshold.

One does not wonder that the British workingman is inferior to his American cousin both in the quantity and quality of work produced, when one sees the hold which the drink habit has upon this class. No village visited was so tiny that it had not several public-houses, each with its open bar and constant stream of comers and goers. The terribly hot wave of last summer was but lightly reflected in England, yet every day while it lasted we passed many men and women, far from any village, unconscious by the roadside. Their red, bloated faces and disheveled appearance told but too plainly their pitiful story. Nor is the habit confined to the peasant class. In the village just mentioned, the master of the grammar school was, we were told, both a drunkard and a gambler, and every schoolmaster who crossed our path was an inveterate smoker.

Not far from the village where we spent that memorable Sunday lies the ancestral home of

the Washingtons. Our first President was so distinctively American that the name of Washington scarcely seems to belong on British soil, yet here in Sulgrave is the identical manor-house and estate bestowed by Henry VIII upon Laurence Washington, great-great-grandfather of the man bearing the same name who founded the American branch of the family.

Standing by itself in the midst of several acres of open land, the manor-house is reached by a well worn footpath across the fields. In the early days it must have been the centre of quite an estate, but much of the land was sold

from time to time as the fortunes of the family became reduced.

Our oldest houses pale into insignificance beside this ancient pile which saw four centuries come and go before Columbus turned his ships to the westward, yet it shows little sign of decay and its stone walls may bid defiance to centuries yet to come.

The present incumbent, who is reaping a silver harvest from American tourists at one shilling each, told us that before the house passed into the hands of Washington it had been an old monastery. In proof of this origin, are the quaint religious symbols carved in stone above the door, and the

niche in the wall of the old room at the left of the banquet-hall, in which was kept the holy water.

The Washington ownership of the place is proved by their coat of arms, from which our stars and stripes was designed, carved in stone above the monastic symbols.

All the rooms of the house are large and rather imposing, even for the present. They contain huge fireplaces, oak floors, one of which has a deep stone border, unfinished rafters overhead, and heavy oak doors which we could scarcely move on their hinges, bound with iron and black with age like all the wood-work. Quaint oak cupboards are built into the walls of the kitchen and dining-room, and there is of course the secret closet with its sliding panel. In this retreat Mary, Queen of Scots, was once concealed on her pony.

No relics of the family other than the house



"There are still retreats where old-fashioned gowns and old-fashioned ways obtain."

itself remain. Until recently, in the little church near by were memorial tablets representing the four sons and seven daughters of Laurence Washington in two rows, graduated according to height, the girls with funny caps tied under their chins and queer mediaeval gowns. Altogether this was a most valuable bit of grotesque art as well as of ancient history, and its loss—for it was recently stolen—is almost irreparable.

Only a few miles away, in the village church of Towcester, is one of the very few old Bibles in England still chained to the reading desk as commanded by Henry VIII. It is somewhat larger than the ordinary pulpit Bible, with huge brown, almost black, leathern covers, and is printed partly in Latin, partly in old English.

It is impossible to look at this old relic without realizing how even the plans of selfish monarchs may be overruled for good. The King's one thought was to assert his sovereignty in the face of the Papal Bull. God's plan was to give a free Bible to a free people, and Henry VIII was the chosen instrument by which the wrath of man was made to praise Him. A common Bible

and a common language, perhaps more than any other agencies, have helped to strengthen the ties of blood which unite us to the mother country. That these ties are growing stronger year by year no one can doubt who visits the British people in their homes and hears on all sides the sincere expressions of good-will, both individual and national. The few unpleasant memories of the past are well nigh forgotten, and the incoming century promises a closeness of friendship between the kinsfolk of these two great Anglo-Saxon nations which no other power will dare to challenge.

HENRIETTA AMELIA MIRICK.

Today is the day of battle,
The brunt is hard to bear;
Stand back, all ye who falter,
Make room for those who dare.

—HELEN HUNT JACKSON.



The ancestral home of the Washington family, Sulgrave, England

DETERMINATION

A man said unto his angel:
"My spirits are fallen thro'
And I can not carry this battle,
O brother! what shall I do?"

* * * * *

Then said to the man his angel:
"Thou wavering, foolish soul,
Back to the ranks! What matter
To win or to lose the whole,

"As judged by the little judges
Who harken not well, nor see?
Not thus by the outer issue
The Wise shall interpret thee.

"Thy will is the very, the only,
The solemn event of things;

The weakest of
hearts defying
Is stronger
than all these
Kings.

"While Kings
of eternal evil
Yet darken
the hills about,
Thy part is with
broken sabre
To win on
the last re-
doubt.

"To fear not
sensible failure,
Nor covet
the game at all,
But fighting,
fighting, fight-
ing,

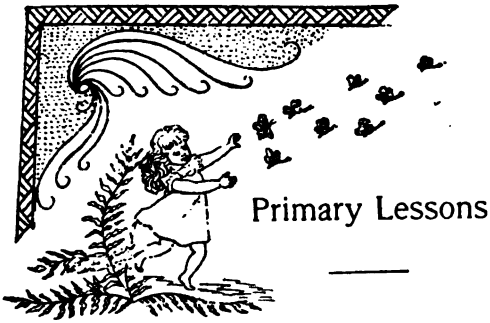
Die, driven against the wall!"

—LOUISE IMOGENE GUINEY.

AMERICANISM

Our democracy means that we have no privileged class, no class that is exempt from the duties or deprived of the privileges that are implied in the words "American citizenship." Now that principle itself has two sides to it, for all of us would be likely to dwell continually upon one side, that all have equal rights. It is more important that we should dwell on the other side; that is, that we all have our duties and that the rights can not be kept unless the duties are performed.

—THEODORE ROOSEVELT.



SELF-CONTROL

"Self-reverence, self-knowledge, self-control,
These three alone lead life to sovereign power."

WHEN the present King of England was a boy of ten years, he visited with his mother the great exposition of 1851. It was not long before something attracted his attention and he began to handle it.

"Can't you read?" inquired the Queen, rapping his fingers and pointing to the placard "Don't touch!" "Remember that laws were made for you to obey as well as for others."

In most children's lives there is a time when the spirit of lawlessness breaks out, seemingly in spite of every effort to prevent it; when windows are broken and orchards robbed even by youngsters who have had the most careful bringing up.

Arbitrary commands are of little permanent value at such times. They but gloss over the surface of things, while leaving the child's nature unchanged. What is needed is instruction which will turn these youthful energies into right channels. Make your pupils realize that they are already citizens of this country as truly as are their fathers and older brothers, and that the first duty of such citizenship is self-government or self-control.

Every child knows that laws exist in our country, as well as rules at home and in the school. Show that every such regulation is for them to obey as well as for their elders. Explain to them the difference between liberty and lawlessness, and show that one can become a good citizen, as he becomes a good farmer or mechanic, only by working at it every day.

(1)

WHAT IS MEANT BY SELF-CONTROL.

Take the happenings in your own schoolroom as the basis for lessons on self-control and kindred topics in morals. Opportunities occur almost daily which can be used to influence without offending the child.

Perhaps some one has seen a runaway horse and is eager to tell about it. Give him a chance

to do so. Ask if any one else ever saw a horse running away. What made him run? How do we prevent horses from running away?

Let the children tell what they know about the harness which horses wear; how horses are guided by the driver; why they are hitched to a post or a weight when left standing in the street, or to the manger when they are put into the barn. Why is it that people can go where they please, while a horse must wait for his master to tell him where to go?

Most of the children will have the right thought even if they can not express it in words. Let them all try to do so, then write on the board the sentence,

We can control ourselves, the horse can not.

Explain what is meant by self-control. That it is the power to hold ourselves in and keep from doing what we ought not, just as the horse is held in by the reins. We can do this for ourselves, and when we do not, we put ourselves in the same class with the horse which can not think and decide.

Tell stories to illustrate ways in which we can control ourselves. One may be about

DONALD AND HIS DOG

"Is he really for me, will he be all my dog?" asked Donald when his father came home one night with a beautiful little puppy.

"Yes, he is your dog. But you must treat him just as kindly as you would want to be treated if you were the dog, and he your master."

"Oh, I will," said Donald joyously, and away he ran to play with Fritz.

A few weeks later Donald went to the seashore with his father and mother and Fritz, and such good times as he had there. He would throw sticks into the ocean and Fritz would swim after them bringing them out to his little master.

One day Fritz got tired after he had been in the water a good many times. He looked up pleadingly into Donald's face as much as to say, "Please don't send me in again just now, I want to rest."

But Donald was not tired and he paid no attention to Fritz' pleading look. When the little dog finally lay down and refused to go, he struck him several times until Fritz finally ran home and left him.

"Fritz is a bad dog. He doesn't mind and I don't like him any more," he told his father at dinner.

Donald's father looked grave when he had heard the whole story.

"A boy that can not control himself is not fitted to have pets," he said finally. "He certainly will not know how to give them orders. I

am afraid I shall have to take Fritz back to his old master."

"Oh, please don't!" begged Donald. "I'll never strike him again. Won't you try me once more?"

Donald did have another chance and he never abused Fritz again. He often used to feel very impatient with his pet, but the thought of how near he had come to losing him made him control his temper and learn to speak and act gently.

Why did Donald's father say that his little boy ought not to have pets until he could control himself? How did Donald learn self-control? What good did it do him? How was it a good thing for others?

Tell Mrs. Ewing's *Story of a Short Life* to the children. What did the boy in this story want to become? What prevented him? How was he a good soldier after all? Why is it nobler to conquer one's self than to defeat an enemy?

Write on the board, for all the children to learn, what the wise King of Israel said:

"He that is slow to anger is better than the mighty, and he that ruleth his spirit than he that taketh a city."

(2)

HOW WE CAN CONTROL OURSELVES

We have found now that what is meant by self-control is the power to manage or control ourselves. We can do this in many ways. One way is to shut our mouths tightly, just as Leonard learned to do, when we want to say cross or naughty words. Another way is to treat every body and every thing kindly, even though we may not feel any more like it than Donald sometimes did.

What are some of the ways in which we can control ourselves at home? at school? in church? at an entertainment? at play?

Tell the children that in olden times every city had a high wall built around it to keep out its enemies. Show pictures of such a city, pointing out the gates by which those who lived inside could go out or in just as they wished. Whenever an enemy threatened the city, these gates were specially guarded, because they were the only ways by which it could be entered.

We can imagine that our bodies are a sort of wall built around our real selves to keep out enemies which might do us harm. What are the gateways in this body wall which we need to guard? How are we practicing self-control when we guard our lips against the taste of beer or the first cigarette? When we guard our hands from taking what does not belong to us?

When we guard our feet from going where they ought not?

Get the children's own ideas in regard to methods of self-control, and devise ways in which they may have abundant practice in this cardinal virtue.

(3)

WHAT SELF-CONTROL DOES FOR PEOPLE

Show pictures of General Miles and Admiral Dewey in their uniforms. Then tell about the training schools at West Point and Annapolis where boys are fitted for the army and navy.

Why is the discipline so strict in these schools? Explain why our naval and military cadets are not allowed to do as they please, and why every soldier and sailor must learn to obey before he can be trusted to command others. Tell the secret of Admiral Farragut's success.

When he was only a boy he went to sea with his father who was in command of a small navy. Many of the sailors were rough, wicked men and the boy soon fell into their bad ways.

One day his father called him into the cabin and asked him what he meant to be when he became a man. "I shall tread the quarter-deck and command as you do," he answered.

"No, David, no boy ever trod the quarter-deck with such habits as you have. You will be a poor, miserable, drunken sailor before the mast, kicked and cuffed about the world, and die in some fever hospital in a foreign clime, unless you change your whole course of life."

David Farragut did change his life, and he changed it at once.

He never uttered another oath, he never drank another drop of intoxicating liquor, he never again gambled, and his determination and self-control made him our first admiral and most honored naval officer.

After telling this story, question the children about it. Why did David's father think his son would grow up only a poor drunken sailor? What kind of a man did he become? In what ways did he learn to control himself?

What do we want to be when we are grown up? What habits will we need to have to be successful in whatever business we follow? What habits will be likely to make us fail? How will self-control help? Tell some things it has done for us already.

(4)

SOME THINGS TO REMEMBER

Write on the board the main points to be remembered, as each topic is taken up in class, and review these as often as occasion requires.

Every child in the United States is a ruler.

Everybody must learn to obey before he can command.

We need to control our eyes, our ears, our mouths, our hands, and our feet, and see that they do right.

We need to control ourselves at home, in the schoolroom, on the street and the playground, in every public meeting, and wherever we are.

Self-control will help us do everything better than we could otherwise do it, and so help us to make the most of our lives.

The great aim of kindergarten work is not to show the child how, but so to guide him that he may be taught to stand alone, and firmly, too, upon his own little feet; to use his own little hands, and his own little mind as the guiding power. It is not always so much what the little one learns, provided it be good, but that he develop the power of self-control, one of the greatest and most necessary qualities leading to self-reliance.—W. H. SCOTT.

Society can no more exist without government, in one form or another, than man without society. Such being the case, it follows that the worst form of government is better than anarchy; and that individual liberty must be subordinate to whatever power may be necessary to protect society against anarchy within, or destruction from without.—JOHN C. CALHOON.

"On what day is Washington's birthday?" the teacher inquired.

"Twenty-second of February," answered the class.

"And Independence Day?"

"The Fourth of July."

"What is the difference between the two days?"

This seemed to be a poser, and no reply was forthcoming. Finally a youngster who had been scribbling on a piece of paper held up his hand.

"Good for you, Johnny," said the teacher, encouragingly; "now tell us what the difference

is between these two of the greatest days of our national history."

"Four months and twelve days, ma'am."—*Exchange.*

The heroes of mankind are the mountains, the highlands of the moral world. They diversify its monotony; they furnish the water-shed of its history, as the Grampians or the Alps or the Andes which tower over the lowlands and fertilize the plains, and divide the basin of the world of nature. They are the "full-welling fountain-heads of change, as well as the serene heights of peace."—DEAN STANLEY.



"He would throw sticks into the ocean and Fritz would swim after them."

To be free man needs to know the value of freedom. The liberty suited to man's nature is liberty restrained by law; and liberty unrestrained, is dangerous licentiousness; but a constitutional freedom will secure all the blessings of human life, and give everything of power and true glory which belong to a civilized and Christian state.—REVERDY JOHNSON.

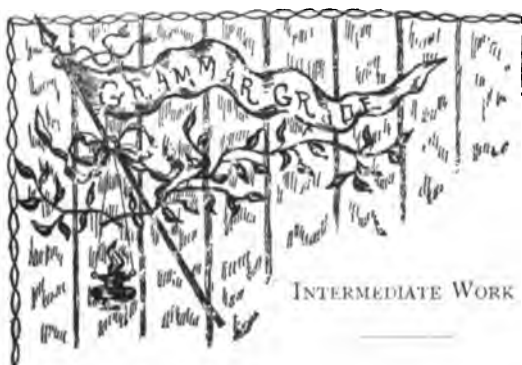
It is not the great sins of the wicked people that bring ruin to the world, it is the follies and failings of those who should be most true and most faithful, and so help to save the world, but do not do it.

—W. S. FROST.

LINCOLN, THE MAN OF THE PEOPLE

When the Norn-Mother saw the Whirlwind Hour,
Greathening and darkening as it hurried on,
She bent the strenuous heavens and came down
To make a man to meet the mortal need.
She took the tried clay of the common road—
Clay warm yet with the genial heat of Earth,
Dashed through it all a strain of prophecy;
Then mixed a laughter with the serious stuff.
It was a stuff to wear for centuries,
A man that matched the mountains, and compelled
The stars to look our way and honor us.

—EDWIN MARKHAM.



THE DECLARATION OF INDEPENDENCE

A NECESSARY condition of liberty is that the possessor shall know how to use it. Goethe's dictum, that

"He only earns his freedom and existence
Who daily conquers them anew,"

was spoken of the individual, but it is equally true of a state in which the people rule.

We are apt to settle back in the conviction that the Declaration of Independence made us a free nation for all time, and that all that is necessary now is to let well enough alone.

Just the opposite is true. Freedom in the United States means self-government. It does not mean and never has meant the throwing off of all restraints, but rather the privilege of regulating our own acts and enjoying for ourselves the benefits of life, liberty and the pursuit of happiness, as far only as these do not interfere with the rights of others.

The only way to forestall anarchy and all forms of municipal corruption is to impress indelibly upon every child's mind the great principles of self-government, to make clear to him that liberty imposes obligations as well as confers privileges, and that he who would live in a free country must assume the duties of such citizenship as cheerfully as he claims its rights.

What the Magna Charta is to England the Declaration of Independence is to America, and study of this historic document will show the principles for which the founders of this government fought and bled, and which they left as a sacred trust to us their descendants.

THE STORY OF ITS ORIGIN

If United States history has been studied in the grammar grades during the year, a brief review of the events which led to the Declaration of Independence will give the necessary setting. If it has not, get together all available school histories and select from each short passages to

be read aloud showing the condition of the colonies at the time of the Revolution.

Bring pictures into class of the dress worn in those days, of some of the famous houses of the time, or of colonial furniture and similar relics; anything, in fact, which will help to make the period real and to arouse interest.

Have the class find when the Declaration of Independence was written, and how long we have celebrated the Fourth of July as a national holiday. Who was chosen to write it?

To whom was the Declaration of Independence addressed? Study the relation of the colonies to King George, and find why they owed him allegiance. How were the colonies governed before the Revolution?

THE OBJECT OF THE DECLARATION

The next thing is to show why the Declaration of Independence was necessary, and the object which its signers had in view. If it was right for the colonists to refuse to obey the laws of the King, why is it not right now for anybody to refuse to obey any law that he does not like?

Read the Declaration aloud slowly and ask the class to write down all the reasons it gives for the separation of the colonies from the mother country. What illustrations, given in any school history, can be quoted to show that all their grievances were real?

Bring out some of the particulars in which the government of the colonies differed from that of the United States, showing that

The colonists had no voice in forming their government.

They could not choose their own governors or remove those who oppressed them.

They were not represented in the English Parliament which taxed them.

They had no redress when unjust laws were passed in England against them.

The object of the Declaration of Independence was to secure for the colonists in America the same rights and privileges which they had had before they left England, and which they could not now obtain from the King.

Show that no such causes for complaint exist in America today because

The people of the United States formed their own government at the outset.

They either elect directly all their officers, or else elect those who appoint them.

They elect all the representatives who tax them and make their laws.

They can make or repeal, through their representatives, just such laws as they wish.

The great difference between the two forms of

government is that if the people in the United States do not like any particular law, they can vote for other men who will change it. The early colonists had no voice at all in such a matter.

Show that there is all the difference in the world between the two cases; and that a people never have the right to rebel against their government or to refuse to obey its commands unless there is positively no other alternative.

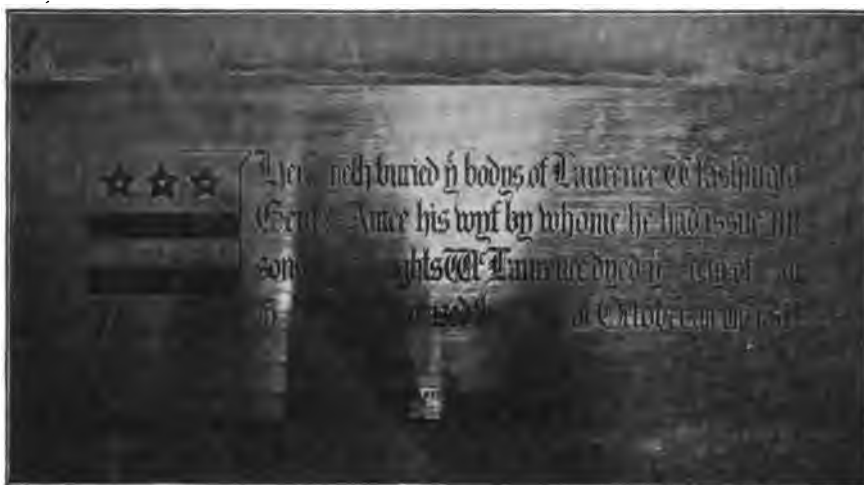
THE DUTIES OF A FREE PEOPLE

Nobody can read the Declaration of Independence without learning, even if he did not know it before, that the founders of this nation thought that all people are entitled to life, liberty and the pursuit of happiness, and that the government under which they live should see to it that they have these privileges. But comparatively few persons stop to think that the Decla-

What are the present rights of a citizen of the United States? What are his duties? Make it clear that we do not have to form a government for ourselves, or even decide what kind of a government we will have, because this work has already been done, but we do have to take care that the government of which every one of us forms a part continues to live up to the Declaration of Independence in which it had its origin, and that we protect the rights of others as carefully as we claim our own.

What are the rights of others which we are thus bound to protect? We can not go anywhere without finding some of them. At school every pupil has the right to study his lessons undisturbed, and it is our duty not to distract his attention by whispering or any other kind of interruption.

What are the rights of teachers which we are



Coat of Arms of the Washington family from which the Stars and Stripes was designed*

ration implies something else which is quite as important, and that is that everybody owes certain duties to the government.

What are these duties which are justly required of a people? Read the Declaration again with this in mind and bring out the facts that

It is the duty of a free people to form a government for themselves instead of living in anarchy, a condition in which nobody pays any attention to the rights of others but tries only to get all he can for himself.

It is the duty of a free people to establish the kind of government which will best secure the safety and happiness of all its citizens.

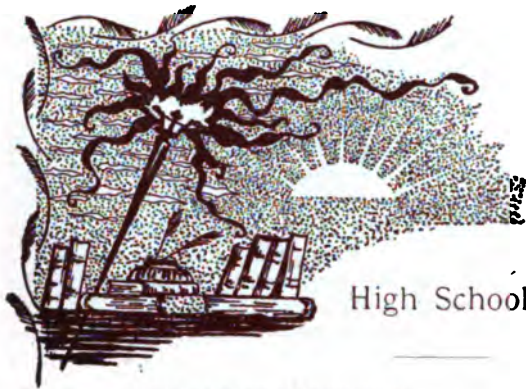
It is the duty of a free people to uphold the government which they have formed and to see that it protects the rights of its citizens.

bound to respect? of our parents? our friends? of strangers whom we meet?

How does one interfere with the rights of others when he smokes a cigarette? when he uses bad language or drinks any intoxicating liquor? Bring out as many other illustrations of rights and duties as time allows, until the underlying principle is thoroughly familiar.

Among the ancients, those whose brave deeds for their country insured their lasting fame were known as the Immortals. The signers of the Declaration of Independence, who took their lives in their hands in order to form a government for themselves and their descendants which should give equal rights and privileges to all, stand high in the list of America's Immortals, and with them belongs also the name of every citizen who carries on their work.

*From the memorial tablet over the tomb of Laurence Washington in Sulgrave



THE CONSTITUTION

IN the age of chivalry, all youths of noble birth looked forward to the time when they should be created knights. No labor was too arduous and no sacrifice too great that brought this coveted honor a little nearer, and when the supreme moment arrived each candidate prepared for it by a night of fasting and prayer before the altar.

In our day citizenship takes the place of knighthood, and nobody thinks much about it, although the privileges it confers and the opportunities it offers are immeasurably superior to anything that feudalism could boast.

It is necessary to be practical in living, but in thought one must ever have ideals. While the romantic conception of life which appealed to the mediaeval youth is out of place today, every boy and girl owes as real a service to his country and needs as ample preparation for it.

Lawlessness at home is a danger more to be dreaded than the incursions of any foreign foe, and the only way to combat it successfully is to implant in the mind of every youth an abiding reverence for the laws and institutions of his native land.

An encouraging step in this direction is the raising of the stars and stripes over the school-house and the memorizing of patriotic songs by the children. The next thing is to study the great historical documents which are the foundation of our government, and especially the Constitution itself.

ITS ADOPTION

Picture the United States at the close of the Revolutionary War, asking the class to notice

- The necessity for a strong central government.
- The kind of government already in force.
- Its defects and weakness.
- Its one advantage in accustoming the people to the idea of union.
- The attempts made to alter and improve it.
- The new government which was established.
- The difficulties met with.

Compromises which were found necessary.
The first national issue and the formation of the first political parties for and against its support.
The men most prominent in changing the government.
How the Constitution was ratified.

ITS MAIN PROVISIONS

The first study of the Constitution should be along broad, general lines, the object being to familiarize the student with its main features, rather than confuse him with details.

With this thought in mind, take up first the departments provided by the Constitution and the reasons why each was deemed necessary. What are the principal duties of each? How are the officers in each chosen? How does each department act as a check upon the others, thus keeping a perfect balance of power?

Who is the chief executive officer in the nation? What are his powers? Give an illustration of each. What persons are forbidden by the Constitution to hold the office of President?

Why is the legislative power vested in two branches instead of one? What special powers belong to each? When do they act together? What were the various steps by which a yearly pension for Mrs. McKinley became a law?

What body decides whether a given law is in harmony with the Constitution or not? What other powers belong to the national Judiciary? What kinds of cases must be tried by it?

ITS RELATION TO PRESENT PROBLEMS

Find how it is that the Constitution is as well adapted to the needs of the country today as when it was first drawn up, although the United States itself has greatly changed in every particular. How may the Constitution be amended? What are the chief amendments which have already been made? Why was each needed? What new amendment has recently been voted by several of the states?

When the pupils have become familiar with the general scope of the Constitution, they are ready for their most important study, that of the relation of every citizen to the government for which it stands.

Have them find who are the citizens of this country. How do they become such? What rights does citizenship confer? What obligations does it impose? How can one prepare for citizenship? What does it mean to be a good citizen?

At the time when Rome was mistress of the world, the privileges of her citizenship were eagerly sought by foreigners and vast sums were willingly paid to secure it. The price of American citizenship should be higher still, nothing less than exalted manhood and womanhood, and every child of the republic should be eager to pay it.

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He serves his country best
Who lives pure life and doeth righteous deeds,
And walks straight paths, however others stray,
And leaves his sons, as uttermost bequest,
A stainless record, which all men may read;
This is the better way.

—SUSAN COOLIDGE.

WRONG IDEAS CORRECTED

ORGANIZED MOTHERHOOD IN EDUCATION

A RECENT number of *Science* contains a report of an attack upon temperance physiology in the public schools, before the annual meeting of the American Society of Naturalists in Chicago, by the retiring president, Professor William T. Sedgwick.

He says the statutes requiring this study "were passed under threats and at the instigation of a self-constituted oligarchy," and that it "is the work of Mrs. Mary H. Hunt, World's and National Superintendent of Scientific Temperance Instruction of the Woman's Christian Temperance Union, and others associated with her."

He movingly appeals to two great American associations for the advancement of science to unite in appointing a standing committee to protect the state legislatures and the national Congress against us and our ideas which he characterizes as "unwise, extravagant and half-baked."

As the mothers, sisters, wives and daughters of many of the state legislators and Congressmen who have passed these statutes constitute a part of the "oligarchy" associated with me in securing this legislation, it is doubtful if these lawmakers have had a realizing sense of their crying need of the protection of this proposed science committee. But we realize the need of scientific study of alcoholic drinks and other narcotics by our men of official science. Professor Forel, M. D., LL. D., of Zurich, after visiting the United States, said that he found such study almost completely absent in the universities of this country. Hence, we promise the proposed com-

mittee courteous welcome and hearty co-operation in the suppression of not only "unwise, extravagant, and half-baked" ideas, but also of the crude ideas, born of appetite, prejudice and tradition; that have not been smelted and refined in the white heat of exact investigation. Such ideas will never be accepted by the mothers who constitute this organization as a part of the teaching of their children. For more than twenty years leaders among us have been tireless searchers for truth on this subject, and we have learned that some things popularly accepted are not true. We state this as no threat, but as an assurance to our brothers that we shall weigh their ideas, just as we ask them to weigh ours, in the balances of truth.

WHERE THE TROUBLE BEGAN

If this is unseemly, the trouble began back in 1639, when the old town of Dorchester "left it to the elders and seven men of the town to decide whether or not the maydes should be taught with the boys English, Latin and other tongues and also writing," in the first free school supported by public taxation on the western hemisphere.

If the successors of these elders and seven men had forever said "No," the condition Professor Sedgwick deplores might have been prevented, but they did not, and "the maydes" in this country as well as the boys for more than a century have been going to the school, the academy, and for less time to the college. They have studied many things, among them, science, government and law. Gifted perhaps a little more than their brothers with that divine compassion that seeks to save, they have learned how to make things happen to assuage and prevent suffering, and thus have sometimes appeared as disturbers of ancient usages. Dorothea Dix went from the school to legislatures and parliaments pleading for the abolition of the brutal treatment of the insane that men had long allowed to exist in public institutions. Clara Barton left the school to become "the angel of the battlefield" in our Civil War, and to arouse the United States to co-operate with other civilized nations under the banner of the Red Cross. Such women will probably continue to appear on the scene of human sorrow as long as pity lives in woman's heart and she is allowed the education which qualifies her to make that pity tell for human betterment.

Charged by Professor Sedgwick with being "the head and front of this offending" in the case of temperance physiology in the public schools, I can only say that study of the problem led me to see that universal compulsory education as to the nature and effects of alcoholic drinks and other narcotics, as a part of physiol-

ogy and hygiene, is the only method that can insure this government of the people against demoralization and ultimate destruction from alcoholism. The Woman's Christian Temperance Union welcomed the method, and for twenty-three years we have worked together for it until Congress and every state in this great nation have made it a legally required public school study. We make no apology for having brought this result to pass.

IDEAS NOT OLIGARCHIES RULE

Professor Sedgwick says that threats and stifling influences brought to bear on law-makers secured these statutes. The popular will has been the only influence, and certainly that should check the waywardness of any man who proposes to ignore the righteous will of the people he represents. We first carried this cause to the source of power, the people; they said with almost unanimous voice to the law-makers, "We want our children taught this branch, we want you to pass these laws." Professor Sedgwick calls us "an oligarchy," a government by the few, "self-constituted," "unofficial propagandists."

The only government we exercise is that of ideas, and if these ideas did not appeal to reason they would be governing nothing and no one today. We are unable to see how the specifications in any existing law bring a "stifling influence to bear on teachers and educators," as Professor Sedgwick complains, if, as he says, they believe in having the dangers in alcoholic drinks taught, and if the truth does not conflict with personal habits. As to our being few, as the term "oligarchy" implies, the Woman's Christian Temperance Union is a great host, organized in almost every city, town and hamlet in this land and in other lands, numbering hundreds of thousands, and giving the official superintendent of this department probably as large a constituency as that which appoints the president of the scientific society before whom this onslaught was made. We do not deny being "self-constituted," for in this land of the free the people, male or female, without taking out permits or letters-patent from anybody, have the right to organize for the furtherance of any cause consistent with morals and the public good. Our government itself is self-constituted.

Professor Sedgwick says of what he terms this "oligarchy":

"Signs are not wanting which indicate that this dominion has reached its climax and already has begun to decline. The Department of Superintendence of the National Educational Association in Chicago within the year passed significant if guarded resolutions drawing attention to this subject."

Just what did the resolutions unanimously adopted by the department of superintendence say on this subject?

"The Department of Superintendence agrees cordially with the special advocates of the temperance cause in holding that everything which public instruction can do in the battle against intemperance ought to be done, and that both physiology and hygiene should be so taught as to leave in the minds of children and youths an adequate and proper knowledge of the effects of alcoholic drinks, stimulants and narcotics on the human system. The educational side of this subject is vitally important and demands thorough and systematic study."

This certainly is in harmony with the purposes of the friends of this movement.

HOW SUITABLE BOOKS WERE SECURED

Professor Sedgwick protests with great vehemence against the legal provision that a definite space shall be given in the school physiologies to temperance matter. If the presence of the multiplication table in our school arithmetics endangered the future profits of a great moneyed monopoly, doubtless we should have to legislate against its omission.

As a result of such legislation as Professor Sedgwick deplures, the first crude books which were offered for lower grades, loaded with technicalities and other unfit matter, have been so revised with an eye to right proportion and adaptation to grade as to make them useful manuals of instruction for the great hosts of public school children who never attend the higher grades. To have waited without legislation for the evolution of this matter might have given us suitable books fifty or a hundred years hence, but it would have been most un-American thus to deprive large numbers of our future citizens of their just right to this instruction during the only time they could get it.

NO SUBJECTION TO A PROPAGANDA

Professor Sedgwick's appeal for opposition to "the legal subjection of science and education to propaganda" is uncalled for. There is no such subjection. The laws of this land require public school study of the nature and effects of alcoholic drinks and other narcotics as a part of physiology and general hygiene, but not a law specifies what such nature and effects are. Anybody can write a text-book on this subject, but the mothers in any community have a perfect right to oppose their children studying such a book, if, in their judgment, it fails to teach the whole truth against the most destructive of human habits. Mothers have a further right, through organization in this and other nations, to secure and protect, as they are doing, this form of education of their children, and to appoint one of their number to act with them in searching for truth, and, aided and advised by men of science, to refuse indorsement to books that do not contain the truth. I make no apology for the fact that it is my fortune to have been thus officially appointed, and woe is me if in this I fail

in aught of my utmost duty, for history will show that organized motherhood, in securing and protecting this education for all the children of this nation, has overthrown the greatest peril to the government of the people.

MARY H. HUNT.

The early Christians, many of them refined and educated, worked on for the emancipation of humanity from the bondage of sin, unnoticed except for persecution. They suffered bonds, banishment, even death in silence with the consciousness that no one would ever know that theirs were martyrs' graves. The fruit of devotion like this is sure. It is over the blood-marked foot-prints of such a path that the highest liberty has come to the world. To go steadily on in a work for humanity, caring most of all that the people be saved, whether your labors are ever recognized, or whether the credit of your service and sacrifice is given to another, is the supreme test of disinterested devotion.

Thank God that he can trust you to walk in that path if another is wearing your laurels.

GREAT TRUTHS

Great truths are portions of the soul of man ;
Great souls are portions of Eternity ;
Each drop of blood that ere through true heart
ran

With lofty message ran for thee and me.

For God's law, since the starry song began,
Hath been, and still forevermore must be,
That every deed which shall outlast Time's span
Must goad the soul to be erect and free.

Slave is no word of deathless lineage sprung—
Too many noble souls have thought and died,
Too many mighty poets lived and sung,
And our good Saxon, from lips purified
With martyr fire, throughout the world hath rung
Too long to have God's holy cause denied.

—JAMES RUSSELL LOWELL.

"The riches of the Commonwealth
Are free, strong minds, and hearts of health ;
And more to her than gold or grain,
The cunning hand and cultured brain."

The most encouraging feature in the temperance work today is the gradual but irresistible demand for total abstinence made by modern business conditions. There is no outlook today for a young man in surgery, in medicine, in banking, in the railroad business, in short, in any professional or business career, who is known to have the habit of tippling. The great insurance companies are joining the rail-

roads and banks and business corporations in demanding total abstinence. This demand will become more common, more imperative, as competition with the world becomes sharper in the twentieth century. The saloon is being condemned by the scientific test of experiment. — J. W. BASHFORD.



"Not wealth, but welfare is success. Young knight advance, fulfil the dream
Of saints and sages;—thee awaits the century supreme."

POLLY'S DILEMMA

"There's something that I've thought
I wish you'd splain to me,
Why, when the weather's warm,
There's leaves on every tree ;

"And when they need them most,
To keep them warm and nice,
They lose off half their clothes
And look as cold as ice."

This is America ! The Second Illinois regiment was made up of 792 American-born men, 71 natives of Germany, 28 of Canada, 27 of Norway, 24 each of Sweden and England, 15 of Ireland, 8 each of Scotland and Denmark, and one or more each of Russia, Austria, Hungary, Switzerland, Italy, Mexico, Bohemia, India, Palestine, Poland, South Africa, Belgium, Serbia, and Cuba.—*Journal of Education*.

CHILDREN OF MANY COUNTRIES

VI. CHINA

ALL American children know that when they go to bed tonight the Chinese boys and girls away around on the other side of the earth will be just getting up tomorrow morning, and if you study geography I can hear you wisely explaining how it happens that they see the sun rise just about the time you are going to bed the night before. It is really very confusing unless you know the reason for it, as of course you do.

But there are other things in China-land that would be just as confusing to you. Wouldn't an American boy think it queer to be called Smith Jack, to read his books from the bottom of the page up toward the top and from the last page back to the first, to eat his food with chopsticks instead of knives and forks and spoons, and to see people wearing white instead of black for mourning? Yet all these things the Chinese boys do and see, and, to tell the truth, they think us just as queer because we do them all the other way.

Suppose that you could dream of what the Chinese boys and girls are doing while you sleep. You will have to begin to dream right away for the young people get up very early in the morning, and the boys, if they go to school, are often in their places by sunrise and hard at work shouting their lessons, as they study, at the top of their voices, as do the boys in India. As soon as any boy has learned his lesson he comes up to recite it, and in doing so does not politely face his teacher as you do, but turns his back so that the teacher may be sure he is not peeping into the book in his teacher's hand.

When he goes back to his bench and table he may have a writing lesson, but there are no steel pens or lead pencils for him. Instead, he uses a little brush which he dips into ink, and it is no easy task which he has before him to learn the thousands of characters which stand for different sounds and letters. There are certain books that every Chinese boy must learn if he would be well educated, and so, day after day, with no Saturdays or Sundays to himself, and week after week, if he wants to become a well educated man, he plods away, sometimes for many years, before he can take the examinations that will permit him to become an official, and all this time he is learning by heart a few books and how to write well about them, and perhaps how to compose graceful poetry. By and by, if he is clever, he may be able to pass the examinations and so get a government position. But it often happens that boys become old men before they succeed.

When our little Chinese friend goes home for

his breakfast at 10 o'clock, he runs through such funny streets, narrow and crowded with many things. Eight feet is usually considered wide, we are told by our friends. Can you see in your dream any of the sights described by one lady who has long lived in China?

"There is a continual pushing through the crowd of foot passengers; of sedan-chairs carried by servants, with sometimes one or two men running before to clear the way, and, if necessary, beat back the crowd; of mules, donkeys or ponies with loads; of carriers with a bamboo across their shoulders, from either end of which a basket hangs by strings. Everything that can be done in the streets is done; peddlers go by with great quantities of goods for sale; men are mending broken china with little rivets; here is a barber shaving a man's head, there is a cobbler mending shoes; here some pigs, there some chickens; here a baby in a hencoop, there a pussy-cat tied to a counter," and, by the way, you will often see the cats tied up, for rats and mice are so many that if the cats are not kept safely they are apt to be stolen and carried away by some one not fortunate enough to own a pussy.

Now, however, you have managed to get through all this crowd with our little friend and have reached his house. It does not look very much like yours in which you will wake up in the morning. Few native houses in China have glass for the windows, most of them having instead heavy silk or paper windows, so of course the houses are not very brightly lighted at day, but at night they are very gay with lanterns of all shapes and colors, and you can see how the Chinese lanterns, which you see at home only at a garden or some other out door evening party, are used in their own country. Doors and windows too are made in many different shapes, round, heart and crescent shape, or of leaf or flower pattern. The walls, ceilings and furniture are often queerly carved and gaily colored.

There is a baby brother in the home of our little Chinese friend. Perhaps you have amused your own little brother by counting his wee toes with the nursery jingle, "This little pig went to market." This is the way it goes in China:

"This little cow eats grass,
This little cow can hop,
This little cow drinks water,
This little cow runs away,
This little cow does nothing
But just lies down all day,—
We'll whip her."

And there you are pulling the tiniest of the Chinese baby's toes, and giving a playful pat on the sole of the little bare foot to finish with.

One of the great amusements of Chinese children is kite-flying. It is said that sometimes outside the city of Peking one may see a thousand or more twisting and darting through the

air. And such kites! No plain paper and stick affairs, these, but gaily colored ones in the shape of dragons, birds, centipedes, frogs and human beings. Sometimes the boys fly two kites together and by sudden jerks cause them to dip around each other. This they call kite-fighting. There are many of the games, too, which delight you at home, among them hide-and-seek which seems to be a favorite among children of all nations. In China, the one who is "it" is called "ping" that is, soldier.

Chinese and American children each have one holiday which, while not coming at the same time, they celebrate very much alike. Where did the firecrackers come from which you set off with so much glee last Fourth of July? Did you notice the gay red wrapping with the queer black characters? Very likely they came from China. But the Chinese have no Fourth of July celebration. They use the firecrackers at New Year's, and all night long there is a bang, bang, showing that the Chinese boy loves a noise as well as his American cousin. New Year's, to boys in China, is Thanksgiving and Christmas and Fourth of July all rolled up in one. The celebration lasts for days. Everybody who is away from home tries to return for this holiday season. Feasts and visits and games make the coming of this festival a time to look forward to during the whole year.

We must not forget that there are girls as well as boys in China, but, as in India, their lives are often less happy than those of their brothers. Some of the fathers and mothers think it of no use to teach a girl anything, except perhaps how to sew and cook, because by and by she will be married and go away to the home of her husband and will never be useful to them any more. Besides, most of the girls can not run about and play as they do in other countries, because they think it beautiful to have very small feet, the smaller the better, so the poor little toes are squeezed and bound till the feet are quite out of shape, and so very tiny that the girl can walk on them but little if at all.

In many of the rich homes the girls are tenderly cared for and petted, but you must not expect, as you go about in China in your

dream, to see them running about in the cities as freely and easily and happily as you do at home.

In the country, where the people are poor and have but little to live on, both boys and girls have to help provide the food and fire and water for the family, so their little lives are busy ones without many things to make them happy and joyful.

Above all things, Chinese children are taught to obey the wishes of their parents and show them every respect. A Chinese child must not even refer to old age before his parents or grandparents, and "every boy has held up to him, as an example to be followed, the conduct of one famous Chinese who, when he was seventy

years old, used to dress himself up as a child and play about the room in order that his parents might not be reminded by his age how very old they were."

Here are some of the rules of behavior that Chinese children learn and must obey:

"First let them learn politeness."

"Their teacher let them obey and reverence."

"When they are called they must come."

Perhaps it would not be a bad plan for our American boys and girls to learn and observe these rules. What do you think about it?



A FAVORITE DAUGHTER

NOBLESSE OBLIGE

Every student has had opportunities not granted to the majority; the state has a right to expect more of him. It asks not only that he should break none of its laws, but that he should help to make and sustain wise laws; that he should stand for good, for right living, right thinking and right acting in the community. It expects him to do that, even at a sacrifice of his own personal interests. If he should not so stand, his education has been a losing bargain. It has simply 'sharpened his claws and whetted his tusks,' that he may more easily prey on his unenlightened neighbors.

—DAVID STARR JORDAN.

If your head always directs your pupils' hands, his own head will become useless.—ROUSSEAU.

AN ALL-WHITE MAP

NEARLY twenty years ago, largely through the instrumentality of one devoted woman aided by noble workers, especially the Woman's Christian Temperance Union, the first temperance education law in the world was enacted in Vermont. As state after state in rapid succession placed similar laws upon its statute books, they were represented in white on the temperance map of the United States, while the rest of the Union was drawn in black.

Mrs. Mary H. Hunt, World's and National Superintendent of the Department of Scientific Temperance Instruction in the Woman's Christian Temperance Union, has just received the pen with which the Governor of Georgia signed the last of these laws now passed by the legislatures of every one of the forty-five states of the United States and by the National Congress, all of which require temperance physiology to be taught all pupils in all schools under state and Federal control.

A company of distinguished people gathered informally in Mrs. Hunt's parlors Saturday evening, January 25, to witness the removal of this last "black cap" from the national map, and to welcome Georgia to the white sisterhood thus made complete.

Among the guests were representatives from the leading temperance organizations of the city, state, nation and world, from the Young People's Society of Christian Endeavor, the Epworth League, the press, prominent clergymen and physicians, and the secretary of the Massachusetts Board of Education.

Delightful reminiscent speeches on all phases of the work were in order, and congratulatory letters were received from the national officers of the Woman's Christian Temperance Union, from the state presidents of the same organization in Georgia and Vermont, who claim the special distinction of being, the one "the first in the world," the other the last in the United States," from Mrs. Livermore, Governor Candler of Georgia, who, as chairman of the House Committee on Education in the 49th Congress, gave valuable aid in securing the national temperance education law, and others.

This study that gives with other laws of health the scientific reasons for total abstinence is now legally engrafted upon the educational system of the entire country, and is fast spreading to other lands. Its beneficent results, already manifest in the greater sobriety of the American workingman and in the increased length of human life, are destined to become more and more apparent. Thorough enforcement will mean a new generation of citizens too wise

to stultify themselves with intoxicants, and thus the peaceful solution, through education, of the temperance problem. All American citizens should protect these laws and their enforcement as they do the flag itself.

A KING

We talked of Kings, little Ned and I,
As we sat in the firelight's glow;
Of Alfred the Great, in days gone by,
And his kingdom of long ago.

Of Norman William, brave and stern,
Who armies to victory led.
Then, after a pause, "At school we learn
Of another great man," said Ned.

"And this one was good to the oppressed,
He was gentle, and brave, and so
Wasn't he greater than all the rest?
'Twas Abraham Lincoln, you know."

"Was Lincoln a king?" I asked him then,
And in waiting for his reply
A long procession of noble men
Seemed to pass in the firelight by.

When "No," came slowly from little Ned,
And thoughtfully; then with a start,
"He wasn't a king—*outside*," he said,
"But I think he was in his heart."

—ELLA MATTHEWS BANGS.

Dismiss from the mind every suggestion that has to do with illness. Do not dwell upon it, do not talk about it. Cultivate thought about others, about the great round world, about its heroes and its martyrs, its battles and its victories, its happy homes and loving hearts, but utterly turn from the night side of suffering, except as you may relieve it, and dwell in the blessed sunshine. There is no sweeter thing on earth than to be one of God's light-bringers, and to make those about you stronger because you are uncomplaining.—*Ladies' Home Journal*.

Only they attain who strive. We do not drift to victories of soul. A steadfast purpose, diligently pursued, is the only path to an overcoming life.—*International Good Templar*.

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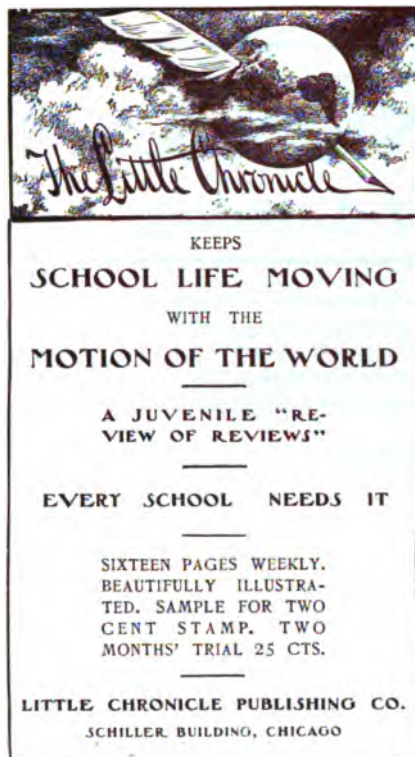
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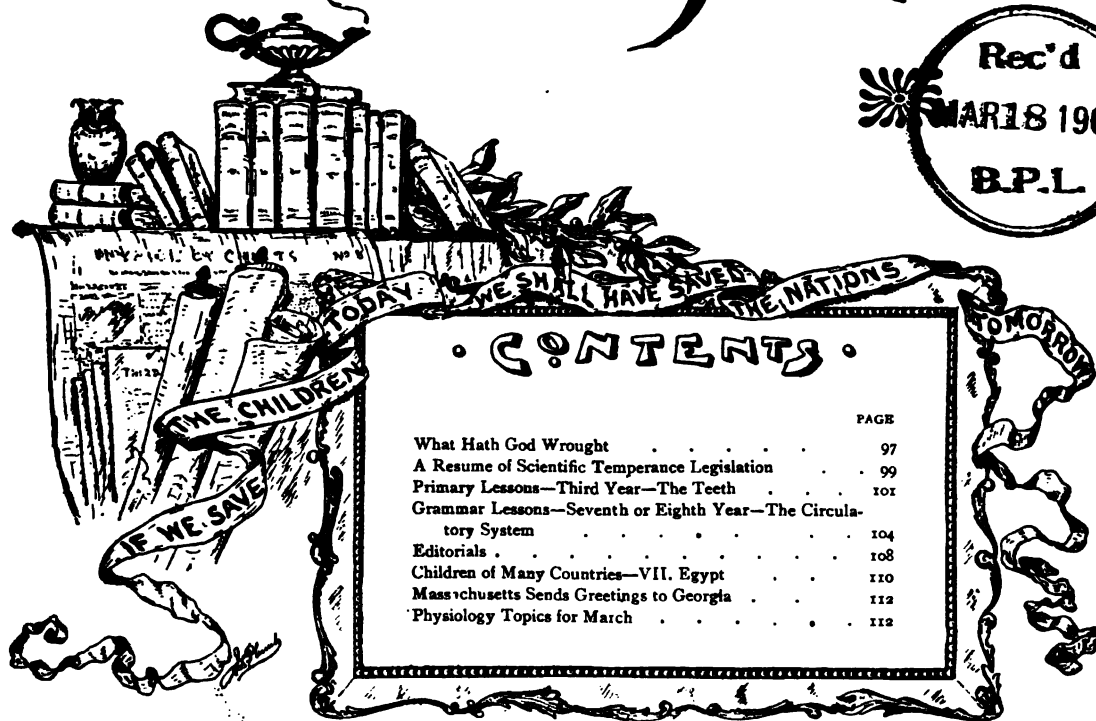
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THE SCHOOL PHYSIOLOGY JOURNAL



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School Physiology Journal

Vol. XI

BOSTON, MARCH, 1902

No. 7

THE PLUCKY PUSSIES

THERE trembled a softer hue
In the blue sky's arch,
As if the high heavens knew
And were glad of March;
But I said, "So deeply piled
Are the drifts o'er her,
This morning in vain hath smiled,
Earth's pulse to stir,
Alack!
Will the summer ever come back?"

"Purr-r-r, perhaps," said the sleek willow pussies,
That grew on the buried brook's brink,
"Purr-r-r, perhaps," said the sleek willow pussies,
"The spring is more near than you think."

"This cup of a vale doth brim
Through the summery hours,
And over its emerald rim
Spill the song and the flowers—
Song of bird, song of bees,
The daisies, the clover,
Song of brook, song of breeze,
All come bubbling over.
Alack!
Will the summer days ever come back?"

"Purr-r-r, perhaps," said the willow pussies,
That grew on the buried brook's brink,
"Purr-r-r, perhaps," said the sleek willow pussies,
"The spring is more near than you think."

LILLIAN CLAYTON SMITH.

WHAT HATH GOD WROUGHT*

ISTAND in the presence of this map most grateful for what God has wrought, but abashed, humbled that I have been allowed to be one of his co-workers in securing the result here represented. The whitening field of this map, as cap after cap has been taken from these states, speaks of God's purposes of mercy to us as a nation. In this hour my heart goes out to the hundreds of thousands of women, state, district, county, and local superintendents of this department, to the great rank and file of the Woman's Christian Temperance Union, and to every one in and out of the organization who has stood by and defended the cause, carrying out every plan that has led to victory while the enemies' shots, maligning of motives, were flying thick and fast about us.

In addition, this nation owes a debt of gratitude to the noble men, the representatives of the people, who have passed these laws. Governor Candler of Georgia, who gave to the Georgia

ladies the pen they have sent to be put in yonder museum with the pens which have signed other laws, is but one of the great host of law-makers who have whitened this map. As a member of the Forty-ninth Congress and chairman of the House Committee on Education, he replied to opponents who were trying to influence, perhaps intimidate him: "If voting for this national temperance educational law will help my political prospects I shall be very glad. If not, I shall vote for it just the same, for it is right."

It is not presumption, it is not arrogance for us, people of the United States, to recognize the fact that we seem to have been chosen by Providence to be the examples and custodians of liberty for the nations of the earth. A people entrusted with such a mission should themselves be free from the worst of all bondages, that of alcohol. Such freedom, to be permanent for a self-governing people, must be the result of intelligent individual choice. And such choice must have its basis in education as universal as the people. That is the philosophy which this map represents, as I saw that philosophy when I first began to think about this subject long ago, and step by step to work toward the present hour.

It is a lofty inspiration to walk with the God of Nations on the heights of service for a great people. One sees and hears there what is invisible and unheard on a lower plane, and understands the changed relations voiced by the Master in the words, "I call you no longer servants but friends, for the servant knoweth not what his lord doeth."

A dying Union soldier from a battlefield in our Civil War, turning his eyes to the stars and stripes, said with his latest breath, "That old flag will never float over a divided nation." In that climacteric hour it was given to this hero to know that his death was not in vain. Glimpses of God's purposes are not wanting to one who in the midst of battle must attempt the seemingly impossible.

As I have gone from state to state with the storms beating about my head, I have known, nay more, have felt the indelible impression that spirit makes upon spirit as the words, addressed to all workers for this cause, have rung through my soul, "Ye have not chosen me, but I have chosen you and ordained you that ye should go and bring forth fruit and that your fruit should remain."

*From an address accompanying the removal of the last black cap from the temperance education map.

Yes, the work will remain, for this is a battle for truth and "Truth is eternal:" it can not be permanently overthrown. Temporary reaction sometimes comes, but "Progress infallibly reawakens."

When the work was done of that most memorable of conventions assembled to draft the Constitution that has held this nation together with a growing strength for more than one hundred years, and the Constitution of the United States had been framed and adopted by its framers, Benjamin Franklin, in referring to the long discussions that had preceded that historic moment, said, "On the back of the chair where our presiding officer (Washington) sits,

take out all decisive instruction against alcohol and tobacco, leaving only a little inferential instruction as to the general utility of being clean and good. To prevent this will demand the utmost effort of every lover of humanity. All Americans should protect these laws as they would the flag itself.

MARY H. HUNT.

A man can do easily, under the stress of an overpowering conviction, what before would have seemed like a miracle to him. He is made strong by wrestling with obstacles. Power is the resultant of the forces overcome.—*Success*.

1882

TEMPERANCE EDUCATION MAP OF THE UNITED STATES AND TERRITORIES



States in Black have no Temperance Education Laws

there is painted a sun half above the horizon. I have often wondered whether it represented the rising or setting sun of this young republic."

We thank God today that it was the rising sun, and that it symbolized the growth of our nation in liberty for all people of all shades. This whitened map, if we keep it white, means liberty from our worst of all foes, alcohol. Nevertheless, as I cut the stitches that liberate the last state from the black cap and the whole map is made white, I know that if we stop now, satisfied with our hallelujahs, in less than five years the whole map will be in black again, or ought to be.

Already there is an organized effort on the part of certain school men to minimize this education, to take it out of the lower grades, to

WINTER DREAMS

Deep lies the snow on wood and fields ;
Gray stretches overhead the sky ;
The streams, their lips of laughter sealed,
In silence wander slowly by.

Earth slumbers, and her dreams—who knows
But they may sometimes be like ours?—
Lyrics of spring in winter's prose
That sing of buds and leaves and flowers :

Dreams of that day when from the south
Comes April, as at first she came,
To hold the bare twig to her mouth
And blow it into fragrant flame.

FRANK DEMPSTER SHERMAN in the *Atlantic*.

A RÉSUMÉ OF SCIENTIFIC TEMPERANCE LEGISLATION

A HISTORY of temperance education legislation in this country is not only a record of the passage of the laws and of the efforts which secured them, but also of the needs which the growing movement developed, and of the meeting of these needs by specific legislative requirements.

The first law, enacted in Vermont, in 1882,

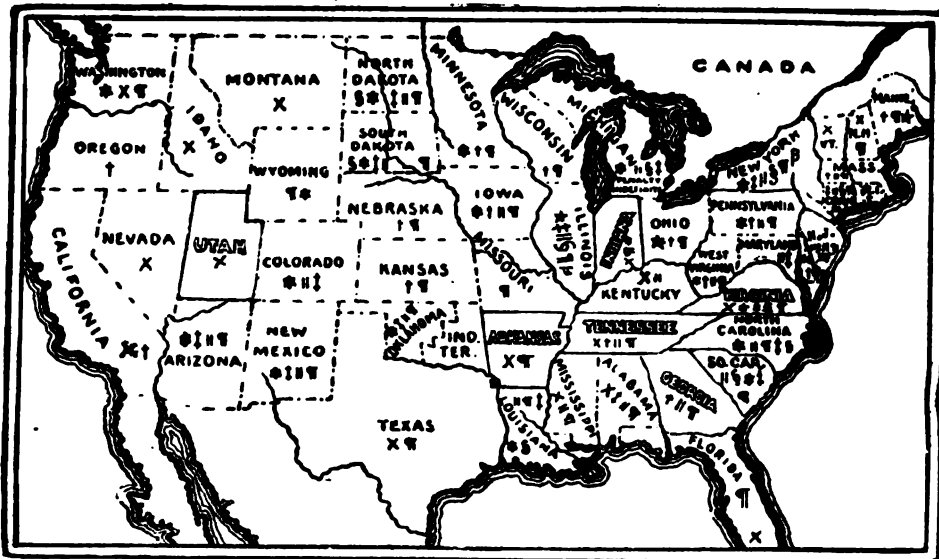
to that of Vermont. In 1884, Rhode Island and New York enacted statutes like that of Michigan.

In each case, Mrs. Hunt personally canvassed the state, formulated the plans for the campaign, presented the bills to the legislature, and pleaded for their passage before legislative committees.

There was now sufficient legislation on the subject to create a demand for text-books at which publishers had once scoffed, but which

1902

TEMPERANCE EDUCATION MAP OF THE UNITED STATES AND TERRITORIES



States in White have Temperance Education Laws

EXPLANATION OF MARKS.—X The cross signifies that Scientific Temperance is a mandatory study in public schools.

* The star signifies that a penalty is attached to this statute.

† The dagger signifies that the study is required of all pupils in all schools.

‡ The double dagger shows that the study is required of all pupils in all schools, with text-books for all pupils able to read.

|| The parallel indicates that the study is to be taught in the same manner and as thoroughly as other required branches.

§ The section indicates that the physiologies for primary and intermediate schools must give one-fourth or one-fifth their space to temperance, and those for high schools at least twenty pages.

¶ The paragraph indicates that no teacher who has not passed a satisfactory examination in this subject is allowed to teach.

≡ Three lines indicate that text-books on this topic shall give full and adequate space to temperance matter.

β The beta signifies that a definite number of lessons for each school year has been made compulsory.

Figure are more than 26,000,000 children of school age in the United States, under Temperance Education Laws.

All American citizens should defend these laws as they would the flag itself.

specified only that "physiology and hygiene, which shall give special prominence to the effects of alcoholic drinks, stimulants and narcotics upon the human system," should be among the subjects required to be taught.

It was soon seen that a few lessons to a few pupils in one school might be interpreted as compliance. Therefore, to the next law, that of Michigan in 1883, was added the requirement, "to *all* pupils in *all* schools." New Hampshire in the same year passed a law similar

they now hastened to prepare by adding matter from encyclopedias to the back of their old physiologies. Obviously, the use of such books would have defeated the purpose of the movement; hence, the safeguard that instruction concerning the nature and effects of alcoholic drinks and other narcotics should be included "*in each division* of the subject of physiology and hygiene" was put into the Pennsylvania statute passed in 1885. This elicited a storm of opposition from agents for the "appendix"

books who originated and industriously circulated the "book-job" charge. But the charge was refuted and the law passed, not only with that requirement, but with a penalty and the further stipulation that the subject should be "*studied as a regular branch.*" Massachusetts secured several of the same provisions that year, but the penalty was indefinite.

The wise generalship of Mrs. Hunt had foreseen that New York and Pennsylvania with their nine millions of people were strategic points, and if these were carried smaller states would with less labor be brought into line. Results justified this policy as, in 1885, laws were enacted in Maine, Alabama, Wisconsin, Kansas, Nebraska, Oregon, Missouri and Nevada, of which all but those of the last two were similar to that of New York.

From this time on, the presence of the national superintendent at the storm centers is marked by the stronger requirements which her experience and familiarity with every form of objection enabled her to secure. The need of these requirements increased with each new difficulty encountered, and it is noteworthy that strong laws have not been enacted except as there has been some one on the ground to answer objections and meet criticisms which, when unanswered and unmet, defeat measures bearing specific requirements.

Four years of experience showed that the teachers alone were not an adequate source of information on a subject in which they had received no training. It was necessary for the facts suitable for each grade of pupils to be presented in text-books for the use of the pupils themselves, and a series of such books, the first ever published, was now ready for the schools.

The next law enacted, the national law passed by Congress in 1886, required that the study be pursued "*with text books in the hands of pupils,*" and included the other strong provisions of the Pennsylvania law. This, the first temperance law ever enacted by Congress, cost Mrs. Hunt ten months of tireless labor at the national Capitol, in which the women of the Woman's Christian Temperance Union of the whole country participated in the great petition work, each in her own field.

The same year, 1886, Maryland and Connecticut enacted laws: Iowa one resembling that of Pennsylvania, while Michigan added strengthening amendments covering all the previous specifications and adding one more, that "*the text-books on this topic used in primary and intermediate schools must give one-fourth their space to temperance matter, and those used in the high schools not less than twenty pages.*" This provision was necessitated by the fact that some of the books then on the market, while treating the effects of alcohol in each division

of the subject of physiology and hygiene, did not treat the topics fully enough to give the necessary information. In 1887, West Virginia, Colorado, and Minnesota passed strong laws, Delaware a weak one, and California one containing the "penalty" and "all pupils" clauses.

The next year, 1888, Louisiana passed the first strong law of the South, Ohio, a law with only one strong requirement, the penalty. Florida, Illinois and Montana followed in 1889. In 1890, the two Dakotas, having passed into statehood, retained upon their statute books the chief points of the national law. Washington, Wyoming and Idaho on becoming states, also enacted laws. In 1891, North Carolina passed a law containing all the strong clauses; Mississippi followed, in 1892, with a weaker statute. In 1893, the Connecticut law was amended to contain the strong specifications; Texas and Kentucky passed weak statutes. In 1894, New Jersey passed a strong law. South Carolina, Tennessee and Indiana came into line in 1895. In 1896, the New York law was strongly amended, and in 1897, the Illinois law. In 1898 Utah, in 1899 Arkansas, in 1900 Virginia, and in 1901 Georgia completed the list, leaving no state or territory in the United States without some form of temperance education legislation, while the provisions of the national law have been extended to Hawaii and Porto Rico.

Throughout all this period of legislation, one fact relating to the opposition is noticeable. The confessedly liquor interests always opposed instruction in this subject in the lower grades, several times expressing their willingness to have the teaching in the schools if it could be confined to the upper grades.

We can not now rest content with mere legislation. With the same earnest devotion that has secured these laws, we must defend them and their enforcement, especially the teaching in the primary and lower grammar grades, the omission of such teaching being the greatest peril that confronts us today.

Space fails us to tell of the many stirring and sometimes picturesque and humorous incidents which have attended the whitening of the temperance education map, as state after state has voted off its symbolic black covering, but through them all gleams a Divine Providence which, in a way far more wonderful than the thread of the old-time mythical labyrinth, has led and still leads to the deliverance of youth from the insatiate powers of evil.

Progress is accomplished by the man who does the things, and not by the man who talks about how they ought or ought not to be done.

—THEODORE ROOSEVELT.



THE TEETH

"SHOW me a child's teeth, and I will tell you what he has to eat," may be stated almost as an axiom, so closely is the problem of nutrition bound up with that of dental development.

Poor teeth and poor food go together. In the rural districts of Great Britain, the children of the working classes often do not have enough to eat, and the result is quickly manifest in the defective growth as well as the early decay of their teeth.

In America, the almost boundless supply of food products ought to preclude such possibilities, but in too many cases the child is still ill-nourished. He may have enough to eat, but it is not the right kind of food, or it is spoiled in the cooking.

There are two remedies. The school can and should give the child right views on the subject, and through the children, in the majority of cases, it can reach and influence parents to provide a more wholesome diet.

Given a good foundation of bone-making material, such as is found in whole wheat bread, milk, the various cereal foods, fruit and vegetables, and there are yet the requisites of proper care, especially cleanliness, and of frequent visits to the dentist to forestall symptoms of decay.

Children can be taught to admire good teeth so much as to be willing to take the necessary pains to secure them. They should know that such teeth are not a special dispensation of Providence conferred upon some and denied to others, but are instead the result of perfect nutrition and proper care, and thus within their own reach.

Thorough mastication of food is an important step toward its complete assimilation by the system, and upon such assimilation one's health and happiness largely depend. We can not begin too early in the school life of the child to teach this fact, and to show him how to care for these organs which are so important a factor in his future well being.

(1)

WHY WE HAVE TEETH

Introduce this first topic by a little talk on tools and their uses in helping people do their work.

Show pictures of the carpenter with his saw or hammer, the gardener with his hoe, the dressmaker with her thread and needle.

Ask the children to name tools used by other workers. What does the blacksmith need in his business, for example? the grocer? the cook? the editor?

Tell something about each of these tools. How are they unlike? Why are not the same ones used in all kinds of work?

There is one set of tools which everybody owns, or ought to, except very tiny babies.

It is always kept in two little pink cases, and when the owner wants to use it he has to use case and all.

It takes thirty-two of these tools to make a full set for grown up people, but a child has only twenty in his set.

When these tools are well taken care of they are white and shining, but sometimes their owner neglects them till their good looks are quite spoiled, or some of them are lost altogether.

What do we call these tools which we all have? What do we do with them?

Probably every one in the class will know that the teeth are meant, and can tell how we use them in chewing our food. But why do we need teeth to do this? Birds and chickens get along without them, and they have to eat as well as people.

Perhaps some of the children have canaries at home. Ask them to watch their birds when they eat and report to the class what they find out.

Some pair of sharp eyes will discover that birds eat bits of gravel with their food. Hens and chickens do the same, sometimes picking up small stones or pieces of glass as well. We never eat such things. Why not?

Now is the time to explain the uses of the teeth. The bread and butter and potato and meat we eat every day are needed to make all parts of our bodies grow, but before this food can be of any use to us it must be ground up into very fine particles, so small, indeed, that the blood can carry it all over the body.

This is the work of the teeth. They are our grinding tools, and it is their business not to let a single mouthful of food slip by them into the stomach until they have made it just as fine as they can.

Bring a meat-chopper into the class, and show the children how it works. The stones and bits of gravel in a chicken's gizzard rub together very much as the rollers in the chop-

ping machine do, and so grind the chicken's food between them. This is the reason why chickens and birds do not need teeth. They have gizzards instead. We do not, so our food must be ground in the mouth.

(2)

HOW THE TEETH DO THEIR WORK

Who has been in a carpenter's shop and seen the rows of tools the carpenter has to help him do his work? Were his tools alike or different? Why could he not build a house just as well if he had nothing but hammers or saws?

Let us take a look at our set of tools and see if they are all alike. What differences do you find?

The class may make the necessary observations on themselves by using a small mirror in turn, or by looking at the teeth of one another. Let each one announce his own discoveries until it is found that

The four front teeth on each jaw have sharp straight edges.

The tooth next to these on each side of each jaw has a sharp pointed edge.

The next two teeth on each side of each jaw have broad flat surfaces.

Which of these teeth do we use to bite off a piece of apple? Which ones do we use when we chew it? Which teeth does a dog use in tearing meat off a bone?

Give the names cutters, grinders, tearers, to these different shaped teeth and show how each describes a kind of work done by the teeth.

(3)

HOW TO TAKE CARE OF THE TEETH

If a carpenter had but one set of tools, and could not get others to take their place if he broke or lost any of them, what kind of care do you think he would take of his tools?

We are a little better off than that because we have two sets of teeth. But the first ones drop out while we are children, and then we have only one set to last the rest of our lives. If we lose these we have to wear false teeth or go without. How many of you would rather keep your own teeth?

Very well, then, we must learn how to give them such good care that they will not decay. See what beautiful white teeth the girl in this picture has! Perhaps you would like to know how she got them, for they were not always as white as this. She lives across the ocean in Norway where there are not as many good dentists as we have here, and where many people do not take as good care of their teeth as they ought. This is the story of

HOW FRIEDA SAVED HER TEETH

Some years ago a party of tourists was traveling in Norway. One day they came to a lovely little village almost shut in by hills and trees. It was so quiet and beautiful that Dr. and Mrs. Kent decided to let the others go on without them and spend several weeks in the village.

They boarded with Mrs. Oleson in a vine-covered cottage, and very soon were fast friends with little Frieda, Mrs. Oleson's daughter.

The first thing you saw when you looked at Mrs. Kent was her teeth. They were small, even, and dazzlingly white. Frieda used to wish that Mrs. Kent would smile all the time so she could see them.

"Will my teeth look like yours when I am a big woman," she asked Mrs. Kent one day, "or won't I have any, like mother?"

"Come, and we'll ask Dr. Kent," was the answer. "He is a dentist and knows all about teeth."

Dr. Kent looked pretty grave when Frieda opened her mouth. "I don't believe you have brushed your teeth this morning, have you?" he asked.

"Why, no, I never brush them," said Frieda, "Nobody ever told me to."

"That is partly the trouble with your teeth," the doctor told her. "You must take care of them while you are a child, if you want to have beautiful teeth when you are grown. Are you willing to do that?"

"Oh, yes, I'll do anything to make my teeth look like Mrs. Kent's," said Frieda very positively.

"Well, then, we'll see what is necessary. First you must buy a toothbrush and brush your teeth after each meal. Begin with your upper teeth and brush downward. Then brush the lower teeth upward. If you brush toward the gums you will be likely to push them away from the teeth. This often makes the teeth decay.

"Brush the inside of the teeth in the same way, and then across the biting surfaces. Here is some floss silk. Pass this between the teeth if any bits of food lodge there, and get them out at once. Every night just before you go to bed, and every morning as soon as you are up rinse out your mouth well with lime water. Do all this for a week, and then we will see what next."

"But I haven't any money to buy a toothbrush," said Frieda, almost ready to cry.

"Well, then, I'll buy it," said Dr. Kent, "and you can pay me back by bringing my mail from the office every day for a month."

A week later, Dr. Kent looked at Frieda's mouth again. "This is much better," he said. "I have hopes of some fine teeth here yet."

"But my teeth aren't straight like Mrs.

Kent's," said Frieda. "These on the sides grow right out into my mouth. Why do they?"

"You lost some of your first teeth too soon," the doctor told her, "and that made your jaw settle together and be smaller than it would have been if the teeth had remained to fill it out. Then when the new teeth came there was not room for them all to grow side by side, so these two grew out into your mouth. But I can help that trouble if you are not afraid of a little pain."

"Oh, I'm not," said Frieda. "But don't hurt very much."

"I shall have to pull one or two of these teeth at the side to give the others more room. Your mouth isn't large enough for them all."

Frieda shut her eyes tightly, and did not cry once while the doctor was at work.

It was a long time before the crooked teeth grew back into place, but they did at last, and the next summer when Dr. Kent and his wife came back to Mrs. Ole-son's they hardly knew the little girl.

Her teeth were straight and clean, and almost as white as the pretty embroidered apron which she had made herself and always wore when she dressed up.

"Will you let me take your picture?" asked Mrs. Kent. "I want to show it to the children at home who sometimes forget to brush their teeth. Perhaps it will help them remember."

So Frieda stood up very straight against a tree, and this is how she looked. You see she forgot to take her apron out of her mouth, but perhaps that was so we can all see how nice and white her teeth are.

(4)

SOME THINGS THAT WILL HURT THE TEETH

Pour cold water into a glass test tube before the class. Empty, and fill with very hot water.

Tell the children that the teeth have a very thin hard covering which may crack and break off, just as glass does, if we drink or eat anything very cold or hot and let this touch the teeth. As soon as this covering is gone the tooth soon

decays. This is one reason why we should not drink ice water, and why we should let hot soup cool a little before taking it.

There were some other things which Dr. Kent told Frieda about her teeth which helped to make them strong and beautiful. He asked her one day what she had for breakfast.

"Bread and coffee," she told him.

"Dear me, that sort of thing will never give you good teeth," he said.

"Your teeth are soft and chalky because you don't give them food that will make them grow. They need oatmeal and milk and vegetables as well as bread and butter. Coffee is very bad for little girls and so is tea."

"Well, then, I won't drink it any more," said Frieda.

"When I was a boy," the doctor told her, "I once tried to crack a walnut with my teeth. I did it, but at the same time I split one of my double teeth right through the middle, and had to have a gold cap put on it. That is better than no tooth, but not half so good as the white tooth I spoiled."

"I never did that," said Frieda. "Mother always told me to soak my bread in the coffee before I ate it, because it was so hard."

"That is almost as bad as what I did," continued Dr. Kent, "because the teeth need exercise to make them

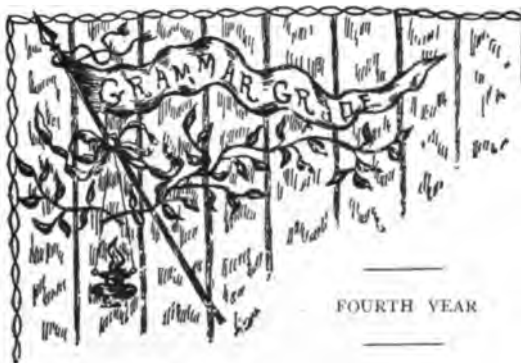
strong. Do you suppose you would have any strength in your arms if you never used them for any real hard work? Eat your bread crusts without soaking them, and give your teeth something to do."

"There is one way in which you will not be likely to spoil your teeth, because you are a girl. If you were a boy, I should say, 'Let tobacco alone, if you want white teeth. It gives them a dirty yellow color that nobody wants to see.'"

"I'll tell the boys in our school," said Frieda. "I know they want white teeth because they said so."



"Her teeth were almost as white as the pretty embroidered apron she wore"



THE CIRCULATION OF THE BLOOD

A FAVORITE maxim with Gladstone was that the time and money which are spent in training the body pay a larger interest than any other investment. The laws on the statute books of every state in the Union requiring instruction in physiology and hygiene to be given all pupils in all public schools are ample proof that America holds the same opinion and is determined to act accordingly.

This is the day of young people, and one reason why the majority of those holding responsible positions have gained them so early in life is that they have learned in the schools the value of a sound, healthy body and are profiting by that knowledge.

It is little consolation to the victim of chronic dyspepsia to be told the elements of a healthful diet and the value of each in building up the tissues. The time when such knowledge would have availed for him has long since gone by, but there is still time to save the child from repeating his father's mistakes.

This is the mission of temperance physiology, —to forestall ignorance of the laws of health by a practical working knowledge of the same, and to establish good habits before those which are evil have had a chance to fasten themselves upon the youth. "The great enemy of the night is the morning," said Victor Hugo. So the most potent remedy for all forms of disease or evil is to preempt the child for righteousness.

Throughout the whole subject of physiology there are but two main problems to consider; how the body is being built up, and how its waste products are being got rid of. Both these functions are united in the work of the blood, hence there is no more important topic for the pupil to consider than this, and first he should know why the body has

NEED OF A CIRCULATORY SYSTEM

One sometimes enters a house containing articles of furniture which can not be accounted for on the score either of use or beauty. Trump-

ery of this sort merely ladders up the house and does not speak well for the taste and judgment of the owner. No blunders of this sort were perpetrated when our bodily houses were furnished. Every organ and tissue was made for a purpose and has its own special function to perform, which it never fails to do unless interfered with. It is our business to learn what these functions are that we may aid and not hinder their performance.

In the case of the blood the first question for the student to answer is why is it needed? What purpose does it serve in the body?

A good illustration of the work of the blood is furnished by the network of railroad systems which extend over nearly our whole country. The great bulk of railroad business is the transportation of freight from one place to another, carrying to each section what is needed there and carrying away to other parts of the country the surplus.

Compare the work of the circulatory system of the body to this distributing function of the railroads. Bring out from the class, in the first place, what things are needed in every part of the United States. Ask what is needed in this locality which we do not produce. What are some of the things which we send away in exchange to other places?

Apply the same questions to the body. What are the needs of every part? How does each part get what it needs? What organs would have an oversupply of food if the body had no distributing system? Which parts would suffer from lack of food? What organs would have too much oxygen? What organs would have too little? What would become of all the waste products which are continually forming in each organ?

Get a large railroad map of the United States and ask the pupils to point out the principal railroad systems. What places do these connect? Why are these terminals always great cities instead of villages or small towns? Ask whether the same principle holds true in the case of the circulatory organs, which are the distributing system of the body. From a chart of this system trace the course of the largest arteries and veins, finding what parts of the body these connect, and pointing out the fact that these go from the heart to the chief divisions of the body, the head, trunk and limbs. Account for the difference in size between these arteries and veins and those which lie near the skin and in the extremities of the body. Find reasons why the capillaries are much smaller than either veins or arteries.

When goods carried over the railroad has reached its destination, it is unloaded from the cars and carried to stores or warehouses. How

is it with supplies carried by the blood? When food and oxygen have been brought by it to the arm, for instance, or to the head, how are these supplies gotten from the arteries to the tissues themselves? They lie close together to be sure, but so may a freight car be brought close to the building into which its supplies are to be put, without being actually unloaded.

Develop this point very fully, explaining that the walls of the capillaries and also the tissues are so thin that the contents of both pass back and forth until the tissues have taken up the food and oxygen they need from the capillaries, and the capillaries have received in exchange waste products from the tissues. This interchange is all the time going on because waste is constantly forming in the tissues, and fresh supplies of food and oxygen keep coming to take its place.

THE BLOOD AS A DISTRIBUTING SYSTEM

To find what freight cars carry we must know what is needed by those parts of the country for which the load is bound. How can we tell, in a similar way, what the blood carries to different parts of the body?

Ask the class to note down the kinds of food required by the various body tissues. They will find that fats, carbohydrates, proteids, and certain kinds of mineral foods are all needed, and that the blood is the only transporting agency by which these substances can be carried to each organ. Oxygen, too, is required by every part of the body, and can reach its destination only by means of the blood, so this also forms a part of its cargo. Each of these substances is taken into the stomach as food or is breathed into the lungs as air. How do they get into the blood?

Railroad companies know that it is poor economy to transport empty freight cars, so the same trains that bring fruit and cotton from the South to the large cities of the North, go back on their return trip laden with all kinds of manufactured articles. The blood performs a like double function. We have already learned what it carries on its outward journey. Have the class find next what the substances are which it takes from the tissues back to the heart, in exchange for those it started with. What becomes of these waste products?

THE COMPOSITION OF THE BLOOD

Everybody knows how the blood looks but a good many people do not know what it is made of or what gives it its red color. Bring an oyster or a clam into class for the pupils to examine. Call attention to the fact that these shell fish have blood in their bodies just as we do, but that it does not look in the least like ours. What is its color?

Prick the finger slightly until a drop of blood collects and place this under the microscope. Ask the class to describe all they can see in it before studying or reading up at all on the subject. After such an observation lesson, refer them to the text-books for full explanation of the various constituents of the blood.

First of all, they should find through the microscope that the blood itself is not red, but gets its color entirely from the countless number of red corpuscles it contains. If the microscope is sufficiently powerful, they should distinguish both red and white corpuscles, and also the plasma in which these are found. Ask all to notice how these two kinds of corpuscles differ in size, shape, comparative numbers and power to move about. Think of reasons for each of these differences.

What happens when a cut surface is exposed to the air, even if no bandage is applied to the wound? Find what element in the blood produces coagulation when blood from a cut surface is exposed to the air. Explain the process, and show its importance in preventing loss of blood. How does it help coagulation to bandage a wound?

THE FUNCTIONS OF THE BLOOD

The elaborate composition of the blood is evidence that each of its elements has some definite function to perform. What these uses are is the next question for the class to consider.

Have them name again the substances carried by the blood to all parts of the body. Then find whether these are all jumbled together in the blood as it happens, or whether the same things are always carried in the same way, just as coal and fruits and meats are all carried in separate cars on a train.

What is the color of the blood in the veins we see on the back of the hand? How does this compare with the color which the oxygen of the air gives to the blood when a finger is cut? How do we know from such observations that oxygen is carried throughout the body by the red corpuscles?

Pupils of this grade must learn the work of the white corpuscles and of the plasma largely from textbooks, but with this as a basis they may draw many interesting conclusions; for instance, why the plasma is fluid instead of solid. After learning that the function of the white corpuscles is to ward off disease from the body, have the class find how this is done, why it is that these corpuscles are often found outside the capillaries in the tissues themselves, and how they get there. Develop the fact that the power they have of changing their shape makes possible their varied movements. Then briefly trace their journey from the blood capillaries through the tissues into the lymphatic circulation.

THE CARE OF THE BLOOD

In transporting valuable freight, the owners and shippers take every possible precaution against accident. It is well boxed, the best cars are used, the engine is frequently examined, responsible officials are in charge, and the road is kept free. The blood transports more valuable freight than any goods train, because it bears the life of the person. How shall we care for it? Evidently by helping it do its work to the best advantage.

Every tissue is constantly crying out for oxygen. How can we make sure that it gets all it needs? Discuss different kinds of exercise with the class, helping them decide which is best for each of them. Why will not the same exercise do for everybody? How does the work one does help to decide what exercise he needs? What has his health to do with it? How does the oxygen one gets in breathing pure air affect the blood itself?

In a similar way consider the relation of what we eat to the blood. Ask the class to make lists of foods which furnish everything the blood must carry to the tissues. What is the harm in eating food that does not supply the tissues with all they need? How is anaemia to be prevented?

Bring out the reasons why both work and rest are needed to give every part of the body all the blood it requires. Have the class find what brings a large supply of blood to the digestive organs, to the brain, to the arms. Why can not one give both his brain and his muscles hard work to do at the same time?

Have the class study the authoritative quotations at the end of this lesson to find how alcohol and tobacco injure not only the quality of the blood but its working power, so that the user is ill-nourished. Such questions as the following may be given to guide the learner:

All parts of the body must have oxygen in order to keep well. How does alcohol cut short this supply? The red corpuscles are the oxygen-carriers of the body. How does alcohol alter their shape and injure their carrying power? The blood must flow freely through the body to keep up its supply of food and oxygen. In what two ways may alcohol hinder this circulation? Pure blood is absolutely necessary. Why is this denied the alcoholic drinker? The blood needs to be constantly aerated. How do even the lighter alcoholic liquors as well as tobacco interfere with this process? If a person is injured it is the blood which must carry food and medicine to his wounds. Why is any accident doubly dangerous to the drinker? Even if large quantities of alcohol do injure the blood, what harm is there in taking a little beer or wine occasionally?

In our last war the country learned that bad

food may be more disastrous to an army than actual warfare. In like manner, make it plain to every pupil that a poor or insufficient diet which impoverishes the blood or narcotics which poison it are more injurious to an individual than is any hardship.

AUTHORITATIVE QUOTATIONS

EFFECT OF ALCOHOL ON BLOOD CORPUSCLES

The blood owes its beautiful red tint to millions of microscopic discs. The red matter with which they are charged absorbs in passing into the lungs the air that has been inhaled, and transports it everywhere. Alcohol encumbers this beneficent action, and so intervenes that the dark blood of the veins is not so completely changed as it ought to be into arterial blood, red and vivifying. But this is not all. The blood contains other globules which are of the greatest interest. These are white globules. If a thorn penetrates the skin, immediately they flow to that place, surround it, form matter which detaches it and gets rid of it. If a microbe, wandering about, gets into our organism, immediately the white globules in the vicinity hasten to meet it, struggle with it and finish by swallowing it. These few words indicate the important role which falls to their lot in the protection of our health. Alcohol, continuing its perverse action, does not leave them intact. It sends them to sleep, it makes them drunk, and so delivers us without defence to the enemies which lie in wait for us.—DR. BIENFAIT, OF LIEGE.

HOW ALCOHOL INJURES THE BLOOD

Alcohol has a very injurious influence upon the blood. The corpuscles undergo pathological changes, such as becoming irregular in shape or notched at the edges. The plastic portion of the blood is subjected to two distinct modifications. When it is freely diluted with alcohol, the plastic part of the blood flows too easily from the vessels and is injected into the surface of the body, giving the skin a mottled appearance, which, in cold weather, through the relaxation of the vessels, turns to blue, or lead color. When the blood is strongly charged with alcohol, the plastic part of it, instead of being reduced, may undergo coagulation, which impedes the course of the blood in its circulation through the finer vessels and, perhaps, through the heart.—G. H. McMICAL, M. D.

ALCOHOL REDUCES THE QUANTITY OF PURE BLOOD

Blood poisoning by alcohol, septic matter, gases, while qualitatively altering the blood for the worse, reduces the quantity of pure blood to parts, while the foreign substances irritate the nerve centers.—S. V. CLEVINGER, M. D.

ALCOHOL LESSENS THE ABSORPTION OF OXYGEN

Alcohol lessens the absorption of oxygen by the blood corpuscles and the giving off of carbonic acid. Every function of the body is thereby affected, is the testimony of Prout, Edward Smith, Harley, Schmiedeberg, Vieronly, Norman Kerr and others.—GEORGE W. WEBSTER, M. D., Professor in Northwestern University Medical School.

ALCOHOLIC DRINKS LESSEN OXIDATION OF THE BLOOD

Wine, beer, coffee, tea, and strong cigars, through their active poisonous principles, enormously hinder the aeration of blood.—EDWARD B. JACKSON, M. D.

THE ALCOHOLIZED MAN IS ILL-NOURISHED

Carpenter has made the assertion that pathologic changes occur in the corpuscles and fibrin of the blood when there is used not more than one part of alcohol to five hundred of blood.

There is microscopic evidence to the effect that the blood corpuscles of the alcoholic are altered in shape, become crenated and shrunken.

Hence they are incapable of conveying the normal quantity of oxygen and hemoglobin.

Griffith states that spectroscopic examination of alcoholic blood reveals a change in one of its most important constituents,—hemoglobin.

Thus alcoholism contributes to the impurity of the blood.

As the physical system depends upon a properly oxygenated blood for its metabolism, its waste and repair, its growth and development, it is not difficult to determine that the alcoholized man is ill-nourished and that many of his organs suffer from degeneration.—J. W. GROSVENOR, M. D., Buffalo, N. Y.

DANGERS OF ALCOHOL IN CASE OF WOUNDS

In the drinker, all wounds are dangerous.

His blood is vitiated and the reactive-power wanting. Hemorrhages are frequent and complication inevitable. Gangrene often carries off the patient very rapidly.—C. R. DRYSDALE, M. D.

THE VERY WEAKEST WINES UNSAFE

Dr. Carpenter is authority for the assertion that the changes in the corpuscles and in the fibrin of the blood take place when not more than one part of alcohol to five hundred of blood is employed. Thus it will be seen that the very weakest wines are unsafe, since none of them contain less than from three to five per cent. Even small beer would be capable of doing mischief in this way.—J. H. KELLOGG, M. D.

I dreamed that as I wandered by the way,
Bare winter was changed suddenly to spring.



And gentle odors led my steps astray,
Mixed with the sound of waters murmuring.
SHELLEY.

The effect of alcohol on the system is to paralyze and impoverish the nutritive system. Conditions of practical starvation supervene affecting all growth. Hence degenerate teeth and gums are the natural outcome. It is a fact that inebriates as a rule suffer from early disease and death of the teeth.—T. D. CROTHERS, M. D., in *Journal of American Medical Association*.

When the stomach is disordered by alcohol, the pulps, or what are commonly known as the nerves of the teeth, become congested and liable to inflammation; this, being aggravated by the irritated and unhealthy state of the mouth, soon culminates in disease and death of the pulp. The teeth, being robbed of that which supplies their nourishment and vitality, decay with great rapidity.—Dr. McEhewney, in *Journal of Inebriety*.

Tobacco injures the enamel, discolors the teeth, debilitates the gums, and taints the breath, while it offers no compensating advantage to the digestive functions.—JOHN C. CUTTER, B. S., M. D.

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IT WAS WINTER

It was winter, and the wood was bleak and gray;
There was portent in the vastness of the night;
But on the waiting earth enchantment lay
That set the trembling east aglow with light.
A violet unclosed, a maple stirred,
A dreaming river woke a drowsy bird,
At dawn a robin soared aloft to sing—
Lo, it was spring!

MYRTLE REED.

TE DEUM LAUDAMUS

TWENTY years ago who would have dared to predict that in this second year of the new century all the public schools of the United States, together with its naval and military academies, would be teaching temperance! If some optimistic reformer had prophesied that in five times that number of years temperance education laws would be mandatory throughout the length and breadth of the land, he would doubtless have been dubbed a visionary. And yet, as the result of twenty years' struggle on the part of the Scientific Temperance Instruction department of the white-ribbon army this splendid achievement is recorded.

In 1882, the entire surface of the department map, so familiar to convention goers, was black, signifying that there were no temperance education laws. Today, every vestige of the shadow has departed, and from ocean to ocean, from the lakes to the gulf, the country is white, all white, signifying that in city and country, in town and hamlet, the coming American citizen is receiving instruction concerning the effects of alcohol and narcotics upon the human organism. This means, as the liquor power fully realizes, that the men and women of the next generation will look with small favor upon a traffic which physical science, no less than moral, shows to be a destroyer of men and of nations. It means, in short, that the public schools are helping to train prohibitionists.

Vermont has the honor of being the first state to remove the "black cap," and each year

at our National Convention the map has appeared in increasing whiteness, until at Fort Worth, in 1901, but one dark spot remained—and Georgia looked decidedly lonesome. Since then, as our readers know, the heroic, persistent work of the white-ribboners and their allies in that state has been crowned with success, and Georgia, last but not least, has come into the fold. At the convention this year in Portland, Mrs. Hunt's meaningful and much-traveled map will match in color the likewise meaningful badge of the Woman's Christian Temperance Union. * * *

But the occupation of the Scientific Temperance department is not gone. The laws secured must be enforced. Then there is a world's as well as a national department. There are other lands to conquer, and the work will not be done until the school children all round the world are being taught the truth about alcohol and narcotics, and until the right kind of temperance laws is not only enacted but rigidly enforced.—*Union Signal*.

Close upon the heels of the victory in Georgia, comes the news that Chile has passed a temperance education law, and is thus the first of the countries in South America to appear in white. Full specifications of this latest law will be given in an early issue of the JOURNAL.

WRONG IDEAS CORRECTED

ALCOHOL AND ITS DEFENDERS

ONE wonders for the nonce what has come over the usually staid college professors. Their sudden rush to defend alcoholic beverages is a little startling. First came Dr. Henry S. Pritchett, of the Massachusetts Institute of Technology, who in allowing the "Tech" student beer and ales under certain conditions raised a clamor which has not yet subsided. Then it was announced that the Harvard Union was also to go in for beer, and now President G. Stanley Hall, of Clark University has just taken a brief for a "howling drunk" as an efficient factor in higher civilization. In the meantime Prof. W. O. Atwater, of Wesleyan University, has been trotting out his favorite hobby-horse labeled "alcohol is a food," and Professor William T. Sedgwick, also of the "Tech" faculty, is out in an attack on temperance teachings, and agrees with Doctor G. Stanley Hall in not being able to abide "the temperance physiology of the public schools."

If one were disposed to look only at the surface facts, the position of these amiable instructors of American youth might be viewed

as not being very different from those in Hudibras who

"Compound for joys they are inclined to
By damning those they have no mind to."

But it is plain there is something deeper in the pro-alcohol attitude of such a group of able men. And that they are not alone in this issue may very well be conjectured. They perhaps incline toward that school of historians which believes that the world has been civilized, its waste places made to yield abundantly, and its great deeds done by the races whose drinking horns were large and whose thirsts were larger.

However that may be, and there is room for argument on both sides, it is certainly true that those who rush to science to support them in their defence of the use of alcoholic beverages are not absolutely unattackable.

THE ATTITUDE OF SCIENTISTS

The very latest work on dietetics, which belongs to the series of books on physiologic therapeutics of which Dr. Solomon Solis-Cohen, of this city, is editor, distinctly sets its face against alcohol as a food or a remedy.

The author of this study of dietetics is Doctor Nathan S. Davis, of Chicago, and he says flatly:

"Alcohol is a poison to protoplasm which checks the activities of living matter and may kill it. * * * * If food is defined as a body that contributes to the growth of cells or their multiplication, and then to the generation of heat and energy by them, it is very questionable if alcohol can be classed as a food."

Elsewhere the author argues against alcohol being used as a food or as a drug, and says:

"Alcoholic beverages do so much harm that their utility under any circumstances has been denied. It is true that they are unnecessary as beverages and even as medicines, for there are

other things that can produce all the good results ascribed to them, but they do excite definite physiologic effects that are often forgotten because of their common use as drinks. A man in health does not need to use alcohol; but it is so extensively employed the world over, either to produce factitious exhilaration or, by lessening sensibility, to mitigate fatigue and discomfort, sorrow and suffering, and it has been so largely and often so injudiciously used in disease that it demands consideration.

So far as he gives it consideration, however, Dr. Davis opposes alcohol, and in so far justifies the temperance hygiene that offends Dr. Atwater. It would seem, therefore, since scientists differ, that the college professors who have become such vigorous protagonists of liquor might well moderate their transports, for they may be arguing without their host. And, be-

besides that, there is a profound moral question involved in making liquor-drinking easy and respectable for the young that should not be overlooked.—*Philadelphia Press.*

"Those who laugh at the abstemious for being pale would be warranted in laughing if it were the fact that the red

face they so much admire was a face indicative of health, and the pale face one indicative of disease. Unfortunately for their side of the case, that suffused face, that jolly red face, that dark red face is the face of disease, while the pale face is the face as Nature meant it to be."

"How many zones have we, Willie?"

"Four," was the reply.

"Well, then, name the four," said the teacher.

"The frigerated, the horrid, the temperance and the intemperance," answered the little fellow.—*Outlook.*



"The long light shakes across the lakes,
And snowy summits old in story."

CHILDREN OF MANY COUNTRIES

VII. EGYPT

D ID you ever think of children in Egypt? I suspect if the truth were known, most of you remember it as the country of the great river Nile, some wonderful pyramids and old temples, but never picture to yourselves boys and girls there running about in the warm sunshine, playing and working just as busily as you do, although in their own native ways.

The land of the Egyptian children, as you know, is one of the oldest of which we know anything definite, and the story of its past is written on its ruined palaces and temples, in the pyramids, and on the obelisks one of which has been brought to our own country. But the writing was so strange ("hieroglyphics" its characters were called), and was so old that its secret had been lost, and for many centuries no one could read it until about eighty years ago when the secret was discovered.

The Egyptian mother watches very eagerly for her baby first to notice a crocodile, for she believes that if he early takes a good look at one he has a fortunate start in life, and it is said that often a sick child is carried many miles to see a crocodile, as the parents believe that by doing so good health will come back again.

The children of Egypt who live in the country on farms are called *fellaheen*. Their homes, which are but huts, are built of mud, each with one door, while if there is any window it is merely a slit in the wall. The roof is likely to be covered with rubbish for fuel. As there is no chimney the smoke has to go out by the door, and it nearly chokes the inhabitants of the hut, which are not only the boys and girls and their parents, but the chickens, pigeons, goats, or whatever else the family may own in the way of pets and live stock.

"The kitchen is a stone outside the house, with a pan or two for the preparation of the simple food which is lifted to the mouth by the thumb and two fingers of the left hand."

In the homes of the children whose parents are richer there is more comfort. Such children do not need to be told to open their windows at night, because the houses they live in consist of two or more courts or yards with rooms open at the top, or partly roofed in. One room is for the cattle, the other for the family. In one of the rooms is a raised seat which shows that the boys and men meet there. On special occasions this seat is covered with a costly carpet or mat which is carefully kept at other times with the household treasures, such as the box containing the family jewels, the cooking utensils, etc., in the inner rooms reserved for the women and girls.

Egypt is one of the best countries in the world for cats to live in, because there every one is kind to them. If you ever visit the British museum, look in the mummy room and you will see mummies of cats that some little Egyptian boy or girl played with thousands of years ago. Their pet name for pussy is *Mau*, so we may be sure that cats speak the same language in Egypt that they do in America.

No child in that country ever forgets to give kitty her dinner, for he is taught that "twin children change into cats at night if they go hungry to bed, and while their bodies are lying asleep at home, their cat-spirits are wandering abroad in search of food." Therefore to be cruel to a cat, which may be a hungry boy or girl in disguise, is not to be thought of. When an Egyptian boy gets too big to play with a cat, he has a buffalo for a pet and, when he is not in school, rides about on its shaggy back just as you do on your pony.

If you could peep into a schoolroom in this far away land, you would find the *shek* (master) wearing long, flowing robes, and with a white turban wound about his head something like an old Southern mammy's. He holds a stick in his hand to apply to any unruly youngster, but he looks a great deal sterner than he really is, for if a child falls asleep he is quite likely to take him up in his arms and hold him while he has his nap.

There are boys only in this school. They sit cross-legged on mats at the master's feet, and repeat "the alphabet written on slabs of wood, painted red or white, which take the place of slates in Egyptian schools." Afterward they learn to repeat the Koran, which is the sacred book or Bible of the Mohammedans, and perhaps to write a little. By this time, the little *fellah's* (peasant boy) education is complete, and he must go to work for his living, "either in the cotton fields or at the dams and dikes that are built to keep the waters of the Nile, when it rises, from inundating the whole country; or he helps to sow the seeds when the water has subsided; or he works the *shadoof*, a machine which is used for raising water; or serves as seller of goods, or as a donkey-boy in the streets of the different towns."

When foreigners visit an Egyptian city they do not find electric cars or even omnibuses. Indeed there would not be room for them in the narrow streets. Instead, a donkey-boy is on hand to take them wherever they wish to go. He is sure to be a bright little fellow and almost always rightly guesses from what country his customer comes. If he is an American, the boy calls out, "Take Theodore Roosevelt! fine donkey, sure! Take Theodore Roosevelt!" Should the visitor be an Englishman, he would be urged to ride "King Edward," or "Lord Roberts." When you have chosen a donkey and mounted

into the queer-looking little saddle, which has a hump in front instead of a pommel, it is much safer to ride with your feet free from the stirrups. This is because the donkey has "a habit of stumbling and going down in a heap. If you have your feet in the stirrups when he goes down you can not help being thrown over the animal's head; but if you ride as the guide does, your feet come on the ground when the donkey falls, and you walk gracefully forward a few steps till the boy brings your animal up for you to mount again."

Girls in Egypt, for the most part, do not have to go to school, or learn any regular lessons except in needlework, but in that they are very skillful, and they, as well as the boys, are taught to honor and respect their parents and all aged persons. The daughters of the rich wear beautiful muslin dresses richly embroidered, and perhaps have a number of maids to wait on them. If the family is poor, the girl's dress is of cotton, with a strip of the same for a headdress, and in this they run about as they please all day long. Like their brothers, the Egyptian girls learn to ride, but instead of buffaloes they have small asses, usually "white of hair, pink of ear, and soft of eye."

The girls' names often have some pretty fanciful meaning, as "Gazelle," "Flower," "Princess," while the boys are frequently named for some patron saint. Among some of the Egyptians "a strange custom prevails with regard to names. Three wax candles are lighted; to each a name is given, one belonging to a saint among them. The taper that burns the longest gives the child its name."

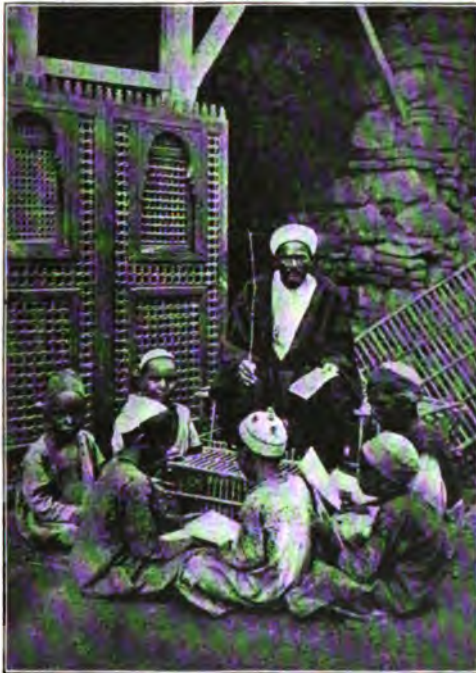
Like the children of other Oriental countries, "not to marry or be given in marriage while very young is the greatest disgrace that can befall an Egyptian boy or girl," and it is a disgrace which seldom occurs. If a girl is unmarried at seventeen, they think her a very old maid indeed.

Child life in Egypt means much of sunshine and freedom, many pleasures, and few tasks or

restraints. Boys and girls play in the warm sand and get as dirty as they please without rebuke. They are seldom told that their faces are dirty, or that their play is too rough for the house. Egyptian furniture is too plain to be injured by a few knocks. Their work or studies would seem very simple to an American child, but, after all, I am quite sure that none of us would like to exchange places with them.

When Horace Mann made a famous speech for the dedication of a building that had cost many thousand dollars, devoted to the reform-

mation of bad boys, he said, "If all this which has been spent upon this building results in the reformation of one boy, it is money well spent." Somebody said to him, "Mr. Mann, do you think one boy is worth all that money?" He replied, "Yes, if it is my boy or your boy." — *Primary Education.*



"He looks a great deal sterner than he really is"

and exclaimed: "Yes, I guess they call that a confoundry!" — *Ram's Horn.*

EASTER PRAISE

Across the Winter's gloom
There falls a golden ray,
And from each wildflower's tomb
The stone is rolled away.

Christ who was crucified
Is risen! Lo, the sign!
The earth at Easter time
Touched by His hand divine.

FRANK DEMPSTER SHERMAN.

MASSACHUSETTS SENDS GREETINGS TO
GEORGIA

BOSTON, Jan. 28, 1902

HON. G. R. GLENN,
State Superintendent of Public Instruction,
ATLANTA, GA.

My dear Mr. Glenn :

The greetings of Massachusetts to Georgia. This letter is to bear witness that the black patch in the region of Georgia on the original temperance education map of the United States has been duly, decorously, and deftly removed therefrom by the designer and owner of the map aforesaid. The removal was effected in the presence and amid the plaudits of a large and sympathetic company. And all the more readily effected because the spot was not ingrained, but only lightly attached against the time when the people of Georgia should say, "Away with it!"

The pen with which your honored Governor signed the Georgia act was gratefully received by her to whom it was sent. She asks you to accept in return the last black patch on her temperance map, and she adds thereto the shears that snipped it from its place. Good-bye, patch, no longer provocative of war in Georgia! Welcome pen, once more mightier than the sword!

School temperance legislation is good, loyalty to its spirit better, and attainment of its end best of all. May the map of our loyalty and our attainment become in time as spotless and as cheering as that of our legislation!

Very cordially yours,

FRANK A. HILL,

[Sec. Mass. State Board of Education.]

RELATION OF THE TEETH TO HEALTH

That mastication may be properly performed, the teeth must be sound; that they may remain sound, they should be kept clean. For the particles of food that adhere to the teeth after a meal become the feeding ground of bacteria whose acid products injuriously affect the enamel and by corroding it often expose the dentine. Entrance is thus afforded to the micro-organisms of caries, which flourish upon dentine, and especially upon the contents of the pulp cavity when this is at length opened.

The proper care of the teeth is of great importance for the maintenance of health. In many cases of severe and even serious dyspepsia the cause of the mischief lies no deeper than the mouth, and the patient needs, not physic for his stomach, but filling for his carious teeth.—*Stewart's Manual of Physiology.*

PRESERVATION OF THE TEETH OF
SCHOOL CHILDREN

Rules recommended by the School Children's Committee of the British Dental Association and circulated for the information of managers and teachers of the National schools in Ireland:

Without good teeth there can not be good mastication.

Without thorough mastication there can not be perfect digestion, and poor health results.

Hence the paramount importance of sound teeth.

Clean teeth do not decay.

The importance of a sound first set of teeth is as great to the child as a sound second set is to the adult.

Children should be taught to use the tooth brush early.

Food left on the teeth ferments, and the acid formed produces decay.

Decay leads in time to pain and the total destruction of the tooth.

The substance of the following rules should therefore be impressed constantly upon all children:

1. The teeth should be cleansed after each meal.

2. A small tooth brush, with stiff bristles, should be used, brushing up and down and across, and inside and outside, and in between the teeth.

3. A simple tooth powder or a little soap and some precipitated chalk taken up on the brush may be used if the teeth are dirty or stained.

4. It is a good practice to rinse the mouth out before going to bed and as soon as one rises in the morning.

5. All rough usage of the teeth, such as cracking nuts, biting thread, should be avoided, but the proper use of the teeth in chewing is good for them.

6. When decay occurs it should be attended to long before any pain results. It is stopping of a small cavity that is of the greatest service.

In 10,000 children's mouths examined, 86 of every 100 required skilled operative treatment.—*Journal of the British Dental Association.*

PHYSIOLOGY TOPICS FOR MARCH

PRIMARY—Upper Limbs; Arms, Hands, Fingers. Uses, Training, Care. Sense of Touch Sense of Smell. Teeth. Bones and Joints.

INTERMEDIATE—Heart. Blood and its Work. Excretion. Special Senses.

ADVANCED—Organs of the Body. Renal System. Skin. Nervous System.

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School Physiology Journal

Vol. XI

BOSTON, APRIL, 1902

No. 8

APRIL IS HERE

"April is here!
There's a song in the maple, thrilling and
new;
There's a flash of wings of heaven's own hue;
There's a veil of green on the nearer hills;
There's a burst of rapture in woodland rills;

There are stars in the meadow dropped here
and there;
There's a breath of arbutus in the air;
There's a dash of rain as if flung in jest;
There's an arch of color spanning the West;
April is here!"

RAINY DAY SONG

WHAT is the rain
that beats
In the face of the
sad gray world,
But the breath of fair
green streams that
once
Among the rushes
curled!

Sweet mists that quivered
once
In waxen lily throats,
Or over the rosy sunset
sky
Drifted in amethyst
boats.

What will it one day be
But the green of the
growing grass,
Or the spring that bursts
from the friendly
hill
To fill the traveler's
glass.

The pansy's purple hood,
The heads of amber
grain,
The violet shine of the
muscadine,
Its lavish tangle of leaf
and vine—
But first of all the rain.

OLA MOORE.

"The south wind's balm is in the air,
The melting snow-wreaths everywhere
Are leaping off in showers."



"Lift up thine heart to greet the Sun;
It is thine Easter time."

THE FIRST BLUE-BIRD

WHEN Nature
formed the April
sky,
Without a word
She took the azure frag-
ment left,
And made a bird.
But, lest the little thing
should love
The heaven best,
She seized a bit of tawny
earth
And tinged its breast.
To make assurance doub-
ly sure,
She framed it so
That evermore, 'twixt
earth and sky,
It flieeth low.
But in its breast she put
a spark
Of heavenly flame,
That, always yearning
seeks the sky
From whence it came.
And so from out that
longing breast,
Touched with the loam,
A song finds echo in our
hearts
Of heaven, our home.
ELLA GILBERT IVES.

"Sweet April-time—O cruel April-time!
Year after year returning, with a brow
Of promise, and red lips with longing paled,
And backward-hidden hands that clutch the
joys
Of vanished springs like flowers."

THE FIRST OF APRIL

THE Infant Earth one April day
 (The first of April—so they say),
 When toddling on her usual round,
 Spied in her path upon the ground
 A dainty little garland ring
 Of violets—and *that* was Spring.
 She caught the pretty wreath of Spring
 And all the birds began to sing,
 But when she thought to hold it tight
 'Twas rudely jerked from out her sight;
 And while she looked for it in vain
 The birds all flew away again.

Alas! The flowering wreath of Spring
 Was fastened to a silken string,
 And Time, the urchin, laughed for glee,
 (He held the other end; you see).
 And that was long ago, they say,
 When Time was young and Earth was gay.
 Now Earth is old and Time is lame,
 Yet still they play the same old game:
 Old Earth still reaches out for Spring.
 And Time—well—Time still holds the
 string. —OLIVER HERFORD.

ACTIVE OPPOSERS OF SCIENTIFIC
TEMPERANCE INSTRUCTION LAWS

ONE of the marvellous lines of effort into which the Woman's Christian Temperance Union long ago entered is law-making. The securing of scientific temperance instruction laws may be recorded as one long campaign from 1882, when the first state law was passed in Vermont, to 1902, when Georgia came into line.

Twenty years is longer than the time of Napoleon's active operations against Italy, England, Austria, Prussia and France itself. With two or three exceptions, it is longer than any of the wars of the world. It is a longer time than from the Boston tea-party to the full-fledged Republic of the United States of America in 1789. The more arbitrary or despotic an army or a government is, the more rapidly it can proceed; but where the will of the people is to be expressed the process is slower. To reach the people with the necessary information, to bring the majority of them to the same views, so that there may be a oneness of opinion which justifies action, is a slow process, always has been, and always will be, and there are apt to be many fluctuations before a question is settled forever. One such fluctuation tends backwards just now.

The preparatory work of the Woman's Christian Temperance Union in scientific temperance instruction may be dated from its first convention, in 1874, when it was recommended that

the children in Sunday schools and public schools be taught the ethics, chemistry, and hygiene of total abstinence. This sentiment, as has been indicated, did not crystallize into law until 1882 in Vermont, under the leadership of Mary H. Hunt, who had become superintendent of that department for the national Woman's Christian Temperance Union.

It is not the purpose of this article to follow the heroic, brilliant, but laborious campaigns in the several states, nor the signal one in Washington, when the federal law was obtained, covering the District of Columbia, naval and military schools, the territories and Indian schools under the United States government, nor to speak particularly of the ability displayed by the national, state, and other superintendents and officers whose diligent and intelligent labors no one article could set forth, and whose devotion and sacrifices for the cause will only be revealed when all things are known.

We are now confronted with just as important a problem as that of law-making, and that is law-keeping and law-enforcing. Scarcely had laws been enacted, when it became evident that if there were a single "hole in the skimmer" the liquor men and their coadjutors would find it out, and if none were in the law they would, if possible, make one in the text-books or in the method of teaching. This is not to be wondered at, for to a good degree the life of the business depends upon breaking down this instruction. The world has said, and the Woman's Christian Temperance Union has believed, that if the facts concerning the harmfulness of the use of alcoholic drinks could be given to the children before they had come into the bondage of appetite, the power of the drink habit would be broken.

It is not to be supposed that a business involving many millions of dollars would sit quietly down and see itself ruined without resistance, or that it would not find means of enlisting others to do its bidding, even to making them believe they were thus doing God's service. The subtle cunning of the serpent has not grown less since the days of Eve, and there are not a few professors, teachers, writers, and even some preachers, who still profess to believe that alcohol is something "to be desired to make one wise."

Our military academies, our medical schools, our schools of higher education, our public schools are, in some instances, and we fear in many, reached by the old teaching that alcohol is a desirable creature for man's well-being, in spite of our laws. In confirmation of this I need only to point to Professor Atwater's teaching, which, while it does not claim so much as is sometimes attributed to it, must still be counted as clearly against the present laws and the present books, since he wishes alcohol to be omitted

from the list of poisons, and arrays himself against present methods.

To the same class belongs a professor of the University of Chicago who, in a recent lecture before the students of Rush Medical College, claimed that alcohol not only does no man any harm, but that a man can not do his best work without it. Professor Munson's text-book, used in the military academy in Washington, not only favors the use of liquor in the army, but advocates, at least by inference, the necessity of the social evil; and some of the public school text-books adopted by state school boards for a term of five years teach that a little alcohol does no harm, that candy is far worse, and that poor cooking has slain greater numbers than has alcohol. There is constant effort to push such books into the schools, thus converting them and the very laws themselves into instruments for propagating the liquor business. Every reader of this article can multiply similar testimony.

There are many conditions which favor the present attack upon the scientific temperance instruction laws and the text-books. It has been discovered that aliens have been employed in the Chicago public schools for ten years, and that there are now one hundred and fifty-eight teachers in that city who have never taken out naturalization papers. Would it not be well to institute an investigation along this line in other cities?

Foreigners are not, as a general rule, educated to total abstinence, and it is reasonable to suppose that this virtue might not be found in one not sufficiently in sympathy with our government to become naturalized. It is painful, no doubt, for a woman teacher who takes her beer—and there are such—to teach what is found in the books. It is repugnant—it is humiliating—for men superintendents, principals, and teachers to teach one thing and practice another, and there are such.

Even scientists have appetites. Ever since General Somebody lost a battle because he ate too much pudding, and ever since Noah got

drunk and disgraced himself, the world has had reason to question how far "findings" and "results" might be attributed to appetite.

We include, as being in line of battle against the scientific temperance instruction laws, the entire power of the liquor traffic, distillers, brewers, wholesalers, retailers, with its millions of dollars and three hundred thousand employes, and all of its newspapers.

We count, in another wing of this army of opposition, nearly all those whose appetites crave liquor or other narcotics, no matter of what profession or attainments. With these must also be counted those whose business interests touch the trade—those who are affected adversely in any way by the teachings of the books; those who have prejudices, either personal or against reforms in general; that large class who confuse personal liberty with personal license; and that rather small class who are so aesthetic that they do not wish their children to know anything of evil, even scientifically stated.

There is also one more class which attacks the teaching, and with about as much reason as the Athenian who said he voted for the ostracism of Aristides because he was tired of hearing him called "The Just." Of this class are those women who are complimented by being asked by the opposition to use their influence, and forthwith denouncing the teaching without knowing the history of how it came to be, and much less what

scientists have taught on the subject.

This vast army of opposers is falling into line under some skillful management and the battle has begun, not only against the books, but against the laws themselves.—SUSANNA M. D. FRY in the *Union Signal*.



"What wondrous beings these,
Whose habitations in the tree-tops even
Are half-way houses on the road to heaven."

"Rear your own monuments before you go hence. Let the pathway of life be studded with monuments reared by your own hand, in the shape of characters that you have reformed, hearts you have blessed, and souls you have raised from degradation to virtue and honor."

WHAT THE TEMPERANCE EDUCATION LAWS DO NOT REQUIRE

MISAPPREHENSION still appears to prevail in some quarters as to the amount of attention which the temperance education laws of the country require for the study of temperance physiology. Suggestions of a change are made on the ground that "these laws require a lesson on temperance every day in the year," or that "thirty lessons a year on anti-narcotics are altogether too much," or that "too much time in the school course is demanded for this study," etc.

No such requirements are made by any temperance education law in the United States, nor is too much time demanded for this study.

A TEMPERANCE LESSON EVERY DAY IN THE YEAR NOT REQUIRED

The first complaint, that these laws "require a lesson on temperance every day in the year," is absurd on its face, since the school year averages 200 days and but one state* requires more than 30 lessons per year in physiology and temperance.

THIRTY LESSONS A YEAR ON ANTI-NARCOTICS NOT REQUIRED

Those offering the second criticism that "thirty lessons a year on anti-narcotics are altogether too much," make the no less serious blunder of assuming that time required for the study of the whole subject of physiology and hygiene is time required for anti-narcotic instruction. Nothing could be farther from the truth.

Just what are the facts? The New York law, like most of the other statutes in this country, requires that "the nature of alcoholic drinks and other narcotics and their effects on the human system shall be taught in connection with," *not to the exclusion of*, "the various divisions of physiology and hygiene."

For example, the nature and effects of narcotics on the nervous system are to be taught in connection with the nervous system; the effects of these substances on circulation, in connection with circulation, and so on.

Thus, in studying the nervous system, the child learns first what organs are involved, how they work, what they do. Then how to keep the brain and nerves in good condition, why pure air, exercise, and good food are essential. After considering each of these topics, he learns also what will be injurious to these organs, and in this connection alone the effects of alcohol and other narcotics upon the brain and nerves may properly be discussed.

Similar study of each topic in turn fully satisfies the requirements of the most exacting law,

hence is very far from making each lesson a temperance lesson.

TOO MUCH TIME FOR THE STUDY NOT REQUIRED

There remains the third objection, namely that the laws require too much time of the school course for this study. Here again, what are the facts?

The New York temperance education law requires only 20 oral lessons in each of the three primary years, and 30 lessons in each of six years above the primary, making in all but 240 lessons in the *whole subject of physiology and hygiene*, including the temperance matter, *distributed through nine years*. From 500 to 900 lessons in geography are often given in the same time.

There are no legal requirements as to the length of lessons in this subject. 10 minutes is the average length of any lesson in the first primary year, 15 minutes in the second and third years, and 30 minutes in grades above the primary. Therefore, the 240 lessons required for this study take but about 103 hours in all of a probable school attendance of 7,200 hours, less than 1 1-2 per cent of the whole. Only one-fifth of even this small amount of time need be given to temperance matter, that is, about 20 hours in nine years, or an average of 2 2-9 hours per year.

Inasmuch as the success or failure of every pupil in life will largely depend on his physical condition, the mere fraction of time required by law for learning how to care for his body is certainly most reasonable. Statements that this amount of time is excessive and that every lesson is to be a temperance lesson are wholly unwarranted by the facts, and any criticism based on such inaccurate assumptions only shows the wilful ignorance of the critic.

The teaching of temperance physiology that will hold the child is not exhortation but facts of science adapted to grade. If this knowledge does not reach the child until he has started wrong it comes too late.

"We teach this subject incidentally whenever anything calls it up," said a principal who complained that his fifth year boys asked to leave the room during school hours and were found smoking cigarettes in the outbuildings. Had they become like old tobacco habitués who are restless unless their nerves are continually narcotized?

Formal, positive lessons begun in the first primary and continued in the following years might have saved these boys. To neglect such timely instruction in early years is to consent to the ruin that follows when the study comes "too late."

*Illinois requires at most but 40 lessons.



Primary Lessons

FIRST YEAR

THE HEAD AND ITS CARE

PROGRESS, Browning tells us, is the distinctive mark of man alone. It does not belong to God because he has already attained, nor to the beast because he can not rise. On the other hand,

"Man partly is and wholly hopes to be."

It is this capacity for development wrapped up in every child which appeals most to the teacher. No matter how uncouth the exterior, life is as surely concealed within as it is in the seed, and with life there is the certainty of growth, either upward or downward as heredity and environment shall determine.

With the very earliest lessons in physiology comes the opportunity to influence the child's thoughts and through these his habits. If he is taught from the first to look upon the body as the temple of the mind and soul, this feeling of reverence will soon become instinctive and it will be impossible for him to act in opposition to it.

There is no chance for decay in the tree so long as it drinks in the air and sunshine and juices of the soil and absorbs these life-giving elements into its own nature. Neither is there room for degrading vices in the child into whose every fiber have been wrought the principles which make for noble living.

THE TOP STORY OF THE BODY

In some of our cities there are very tall buildings, sky-scrapers they are called, ten, fifteen, or even twenty stories in height. What is the tallest building that any of you have ever seen? Where is it? How many stories high is it? Show pictures of such buildings which may be found among the advertisements in almost any paper or magazine if not otherwise at hand.

Did you ever think that our bodies, too, are built in stories, one on top of another, just like a house? These body stories are very small compared with those of a building, but quite large enough for the kind of furniture they are meant to hold.

Let us find how many stories high our bodies are. We will begin with the lower story, the one on which we walk and run about. What do we call it? What is the name of this large middle story?

If you were in a city and wanted to see as much of it at once as you could where would you go? To some high place certainly, perhaps to the roof or top floor of one of its tall buildings.

This morning we are going to talk about the top story of our bodies. Where is it? Put your hands on it. What is its shape? Tell what its name is.

We do not have to climb long flights of stairs or go up in an elevator to get to this top story. We are here to begin with. When we want a good view of anything about us, all we have to do is to look out of the windows.

Where are the windows in this little top story of our bodies? How many are there? Point to the one on the right side, on the left. Why do you think they are placed in the top story?

We can open and shut these little windows, just as we can the windows in the house at home or in the schoolroom. Try it. You may all open them now and tell something you can see through them. Give each child in turn a chance to answer this question.

There are other things besides windows in this top story of our bodies. Let us look around a little now we are up here and see if we can find what they are.

ITS EXTERNAL PARTS

Look again at the pictures of these high buildings we were talking about a moment ago, and tell what we call the covering over the top story. What different shaped roofs have you seen on houses? What are some of the materials of which house roofs are made?

Find the part of the head which we may call the roof. What is its shape? What kind of a covering has it? Name all the different colors of hair you can see in the room.

Sometimes the roof of a house comes down lower on one side than on the other. How is it with the covering of the head? How far down does the hair grow in the back? on the sides? in front?

What gateways do we find on the sides of this top story? What are they for? How many ears does each person have? Point to your right ear, to the left.

Now we have got round to the front of the head and are ready to find what is there. We have just been talking about the windows. What do we call this little thatch of hair which grows out over them? Perhaps you may have seen something built out over the doorways or

windows of certain houses to keep out the rain. Who can tell why we need eyebrows over the eyes?

There are other parts of the head which have not yet been mentioned. Point to such parts. What is the name of each? Tell what its use is.

As each external feature of the head is named and talked about, write the word on the board until the class are as familiar with its written form as with its sound and meaning. Review by asking different children in turn to name all the parts thus discussed, while the rest of the class point to each on their own heads.

REVIEW READING LESSON

Our bodies are three stories high.

The first story is the legs, the second story is the trunk, the top story is the head.

On the outside of the head are the hair, ears, forehead, eyes, eyebrows, eyelashes, lids, nose, cheeks, mouth, and chin.

The hair covers the top and back of the head.

It helps to keep the head warm in winter and to keep off the heat of the sun in summer.

The color of the hair may be black, brown, chestnut, auburn or golden.

We have two ears, one on each side of the head.

We hear with our ears.

The front of the head is called the face.

The upper part of the face is the forehead.

The lower part of the face is the chin.

Our eyes are the windows of the body.

They are in the upper story so that we can see better.

The eyebrows are built out over the eyes to keep out dust and perspiration.

At night we pull down the curtains over our eyes so they can rest.

These curtains are the eyelids.

They have a fringe on the bottom called lashes.

Just below the eyes is the nose.

We breathe through the nose.

If we did not have noses we could not smell the sweet flowers.

We have two cheeks, one each side of the nose.

The mouth is to eat with and to talk with.

HOW IT IS FURNISHED

All this time we have been talking about the outside of the head, but the most important part is within, shut away where it will be safe, just as precious jewels are kept in a strong box.

The hard, upper part of the head is the strong box of the body. Feel how firm it is. What is its shape? Why do you think it is

rounded instead of square? Why has it no sharp corners?

Inside the upper part of this strong box is the brain, the part of the body with which we think and act. This is the most precious part of us. That is the reason it is put away so carefully. Watch while I write the word, b-r-a-i-n, on the board so that we shall all remember it.

All the little gateways in this upper story lead right to the brain from the outside of the head. How many of them are there. Point to each. Tell something that goes to the brain through the gateway of the eyes? of the ears? the nose? the mouth?

There are other uses for the lower part of the head, very important ones, too. Who knows what they are? Think what you did with the breakfast you ate this morning, and you will know one of them. We might call the mouth the reception room of this top story, because one of its uses is to receive all the food we eat. How is this little reception room furnished?

Which parts of the head do we use when we talk? Shut your mouths tight and try to speak. Which part of the mouth can we move?

REVIEW READING LESSON

The top story of the body is something like a strong box.

It is oval in shape.

It has no sharp corners to get hurt.

This strong box holds the brain.

The brain is the part with which we think and act.

There are four gateways leading to the brain.

One is through the eyes, one is through the ears, one is through the nose, one is through the mouth.

Almost everything we know comes to the brain through these little gateways.

The lower part of the head is like a little storeroom.

It is made to hold just one mouthful of food at a time.

In this storeroom are the tongue and the teeth.

The teeth are to chew our food.

The tongue helps us to swallow.

We could not talk if we had no tongues.

The parts of the head which we move when we talk are the tongue and the lower jaw.

We have two ears, and two eyes, and one mouth. So we should see and hear twice as much as we say.

CARE OF THE HEAD

How shall we take care of this little top story of our bodies which holds such precious treasures? One way is to guard it as much as we can from bumps and bruises. How does the

catcher in a ball game protect his head? Most people do not need to wear such a mask unless they are in dangerous places, but everybody ought to be careful of the head. Of course we never strike any one on the head even in play.

If we watch our pets we shall find out some of the ways in which they care for this part of their bodies. How does kitty keep her head in order?

We need clean hands and faces as well as pussy, but we do not wash them just as she does. Why not? How do we keep them clean?

Where does kitty keep the comb and brush she uses on her hair? How does she use them? How many times a day? Watch and see.



"O child, upon thy sunny head
The glory of the morn is shed.

take of the head and all parts of the body. In health, their feathers or hair are always carefully dressed and smoothed just as often as any thing happens to soil or ruffle them, though having nothing but head and feet to work with.

Give, one at a time, a few simple directions as to the care of the hair:

It is to be kept free from snarls and tangles.

It is to be combed and brushed gently at least once every day.

Long hair should be braided at night, or pinned loosely in papers if curly, to prevent tangles.

The ends should be clipped occasionally to keep them from splitting.

The hair must be washed often enough to keep the head clean.

CARE OF THE FACE

There was once a little girl who was very fond of soft boiled eggs and had one every morning for her breakfast. But she often forgot to use her napkin or wash her face afterward.

Then, unless her mother or older sister watched very carefully, she would run off to school with traces of egg in the corners of her mouth and sometimes on her chin.

Everybody who saw her knew just what she had had for breakfast, and, I am afraid, thought she was not a very tidy girl. What do you think?

What should this little girl have been trained to do when she ate and afterward? How shall we care for the mouth after a meal? Why do we need napkins at the table? How shall we use them? Get the children's own ideas on this point, then correct and supplement as may be necessary.

Find whether each child has a tooth brush of his own, and if he knows why and how it is to be used. Ask what kind of teeth we like best to see. How can we keep the teeth clean and white? Why do the teeth need brushing after each meal?

In connection with this lesson teach the proper use of the handkerchief in caring for the nose, and see that clean handkerchiefs only are carried. Children are naturally careless in the matter, and this



"Here at the portal thou dost stand,
And with thy little hand

is the time to help them form habits of personal neatness.

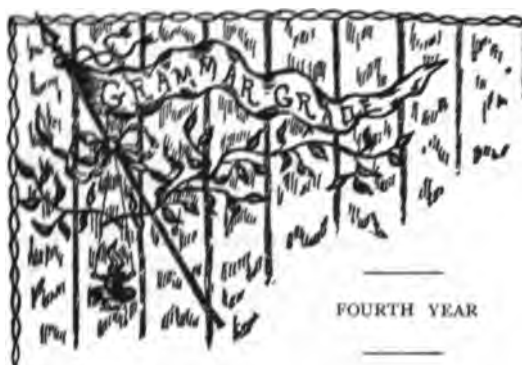
Such subjects can now be discussed without embarrassment on their part, which will not be the case in later years.

Sometimes we hear one person say to another, "That man has a clear head," or "This one is thick-headed." He means that one has the power to think and act quickly while the other is slow and dull.

What kind of heads do we want? We must let beer and tobacco alone then, for they often make people stupid. They can make a child sleepy when he ought to be wide awake, slow in getting his lessons, and of little use anywhere.



"Thou openest the mysterious gate
Into the future's undiscovered land."



THE ORGANS OF RESPIRATION

It would seem ridiculous to protest against economy in breathing, were this offence against life and health not committed every hour of the day.

In practically every home and schoolroom in the land, children are growing up delicate, flat-chested, anaemic, when they might be pulsing with energy. Later on they will pay exorbitant prices for preparations of oxygen which they could get for themselves from God's free air, if they had but capacity to take it in.

What is the remedy? First, let us see that every child under our care is dressed right, with no constricting bands to interfere with complete lung expansion; that he sits and stands correctly; that he knows how to breathe, and is supplied with enough pure air twenty-four hours in the day. This much as a matter of course in the primary grades, in which habits, either good or bad, are certain to be formed. Then, as soon as the child is ready for it, and in lessons suited to his mental grasp, teach the relation of breathing to every vital action.

If one wants a good fire he turns on the drafts. So, if we would have energy for play, or thought, or work, we must open the lungs to their widest capacity, and let in the vivifying oxygen.

Give enough time to the organs of respiration to find how they do this work, and how they may be helped to do it more abundantly. Then turn to the other side of the question, the abuse to which they are often subjected through unsuitable clothing, incorrect posture, and the destructive effects of narcotics.

Above all, let us remember that the work must be continual, not spasmodic. New children are in our classes every year, and the old ones forget. It is not enough that the sun rose last summer, last week, yesterday; every day the earth needs the light and warmth of its rays. The child, too, needs daily help in right living, and an ever fresh impulse away from aught which can retard his progress.

DESCRIPTION OF THESE ORGANS

How the air gets into the body from the outside is the first question to think about. Have the class find the two openings by which it enters. Which is the shorter passage? Which is the better way for the air to enter? Why?

Ask the class to rise, stand erect with hands on hips, and take one or two long, deep breaths. What movements take place in the chest or upper part of the trunk during this process? What makes the chest move?

With the aid of the best charts or diagrams to be had, study with the class the location of all the respiratory organs, both with reference to one another and to the rest of the body. What do these include? Find about how much space the lungs take up. What other organs are in the chest cavity?

Ask the class to make drawings of the respiratory system from nose and mouth to the lungs, using the charts in their books as a guide at first, then reproducing the same from memory. It is not necessary to spend much time on this work, the object being not to produce finished drawings, but to familiarize the pupil with the relative position of these organs.

Notice that all parts of the respiratory system are not made of the same kind of material. Why not? Feel of the windpipe in the front of the neck, just below the chin. Why is it made of tough rings instead of soft tissue like the gullet? Do these rings extend all the way round? Compare the gullet and windpipe of the chicken, noticing the same difference. Which stays open of itself? Why is this necessary?

Trace on the chart the branches of the windpipe leading to the lungs. Notice how these branches divide and subdivide until they finally end in the countless little air sacs that compose the lungs. Find how the material of which the windpipe is made differs from that of the lungs, and think of reasons for such difference.

Show a chicken's lungs and tell the pupils how these are puffed out by the air when the chicken inhales, to become small again every time he exhales, or sends air out of his lungs.

Compare the air sacs of which the lungs are made to a bunch of toy balloons on a very small scale. What holds such balloons out round and full as they appear when we see them being peddled in the street? What happens when the air is let out of them? Show that a similar process is continually going on in the lungs of every living animal possessed of these organs, and that by means of it the oxygen of the air is taken into the body and much of the body waste is thrown out.

RELATION TO LIFE AND HEALTH

Most housekeepers think they are very neat indeed if they sweep and dust and air out their rooms once a day, but such cleaning would not do at all for our body rooms. To keep these clean and sweet the fresh air has to pour all through them several times a minute as long as we live.

How does it get to every part of the body? We have traced it as far as the air cells of the lungs, but its journey thus far is only just begun. How can it get from here to other parts of the trunk, and to the head and feet?

Put on the board colored drawings of an artery filled with tiny red corpuscles, each carrying its mite of oxygen to some part that needs it as it hurries along. Show a chart of the whole arterial system, and have different ones in the class trace from this the journey which fresh air takes as it rides with the blood from room to room of the body to keep all supplied.

To prevent misunderstandings, tell the class that the red corpuscles are really very much smaller than shown on the board, too small to be seen separately, except through a microscope, but that there are such countless numbers of them that they give the blood its red color.

A good housekeeper does something else besides let the pure air into her house. She takes out every bit of waste matter. Show that this too is just what is all the time being done in the case of the body.

Illustrate the venous system also by board or chart, having the class this time trace the course by which impurities are removed from every part of the body through the lungs.

A bottle of perfumery with a handkerchief held over the mouth can be used to show how easily oxygen from the lungs can get to the blood corpuscles, and waste particles in turn can pass from within the blood vessels to the air cells in the lungs, since the walls of both blood vessels and air cells are much thinner than the handkerchief.

Take the class to visit the power house in which the electricity is generated which moves our street-cars, or to see the machinery in some mill. Substitute something else illustrating the same principle, if neither of these is available. The furnace which supplies the heat for the steam engine will do, or even that which warms the school building. What happens when any of these steps work?

How do you feel after a brisk walk or run outdoors in the early morning? What is it that makes one tingle all over with life and vigor after such exercise?

Help the class to realize that it is the oxygen of the air which gives this fine feeling of health, which keeps the body warm, and which makes its every motion a delight. This body energy

is more valuable than any machine-made electricity, because it keeps us well, besides furnishing energy and strength.

How does it do this? Tell about the armor which people used to wear in olden times to protect themselves from their enemies. Show pictures of armored knights to make the scene more vivid.

Nowadays, one of the worst enemies we have to fear is sickness or disease, against which coats-of-mail would be of no use whatever. The best kind of armor to protect us from such a foe is the oxygen of pure air. Where do we wear this armor? Not on the outside of the body but on the inside, and we need a fresh supply every time we breathe. Let us all see that we get it.

METHODS OF DEVELOPMENT

A noted French doctor prescribes three health rules for children :

Let them live in the open air.

Encourage them to live in the open air.

Make them live in the open air.

As an abundance of pure air is the first requisite to health, one can but echo his advice. But it is of almost equal importance so to develop the breathing apparatus that one may make the most of such air when he has it.

Notice whether any in the class breathe habitually through the mouth, and find why this habit has been formed. If adenoids are present in the throat, have the pupil consult a physician. Explain the use of the short hairs in the nose in preventing dust from reaching the lungs, and show also how the lungs are better protected against the entrance of germs and against cold if one breathes through the nose.

For chest and lung development practice the following exercises with the class :

Stand erect, chin back, inhale slowly, rising meanwhile on the toes and endeavoring to inflate the lungs upward and outward rather than downward. Hold breath a few seconds. Exhale as completely as possible, lowering heels to floor.

Extend arms, placing tips of fingers together in front of the body. Keeping arms straight, raise hands as high as possible without bending the body at all, at the same time taking a long breath. Lower arms slowly while exhaling. Repeat several times.

Raise hands from the sides over the head while inhaling. Lower to side while exhaling.

Stand with elbows bent on level with shoulders, finger-tips meeting in front of the chest. Extend arms at same level while inhaling. Return arms to front of chest while exhaling. Repeat.

Practice all these exercises as slowly as possible till the normal number of respirations per minute during each is not more than ten or twelve.

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Frequent chest measurements of the pupils will tend to arouse enthusiasm as to which shall secure the greatest increase in lung capacity within a given length of time.

EFFECTS OF NARCOTICS

An important point to bring out in studying this topic is the close relation which exists between diseases of the throat and lungs and the use of alcohol and tobacco.

It is of little use to increase one's lung capacity only to expose a greater surface to the destructive influence of these twin powers of evil. For this reason, if for no other, along with directions for developing lung power must be given definite statements of the harm done the respiratory system by drinking and smoking.

In order to train even young pupils to study these questions for themselves, it is desirable to make as large a use as possible of the authoritative quotations which are given with every lesson. An excellent way of introducing work of this kind is to prepare questions covering important points and leave the class to find answers from the quotations themselves. Questions intended for such work in this grade are indicated below.

The class have already traced the course by which fresh air gets to the lungs. Have them repeat the process showing how the smoke inhaled by the tobacco user reaches the lungs. What organs must it pass through? How does it affect them?

Cigarette smokers always exhale offensive odors, have a sallow skin, lusterless eyes, and a listless manner. Find the reason. Why is the tobacco user's supply of oxygen less than that of other people? Give reasons why the smoker is more liable to lung diseases than he would be if he did not use tobacco, and less likely to recover. Why does he take cold easily?

If a person has taken a glass or two of beer, he soon betrays the fact by his breath. How can alcohol get from the throat and stomach to the lungs? Evidently not in the same way that tobacco smoke does. How then? Review the course traversed by a substance which has been swallowed, as it makes its way to the lungs.

Alcohol takes this same journey, and leaves harmful traces all along the way. When it reaches the lungs it poisons the delicate lining membrane. Why does such injury make the drinker more liable to bronchial colds and catarrh?

More people die of consumption than of almost any other disease. Why is a person more likely to be among the number if he drinks than if he does not? In what ways is the use of beer or wine as dangerous as that of spirits?

It used to be thought that alcoholic drinks were good for those who had lung troubles. How are such drinks really a double injury? Find how total abstinence from both drinking and smoking tends to ward off all disease and to give one better health.

AUTHORITATIVE QUOTATIONS

ALCOHOL A CAUSE OF BRONCHIAL CATARRH

Alcohol is excreted by the lungs to some extent. The direct toxic action exerted by it on the mucous membrane is probably the cause of the bronchial catarrh which is not uncommon in drinkers.—*Allbutt's System of Medicine*, Vol. III. p. 861.

EFFECTS OF ALCOHOL ON THE LUNGS

Those who have injured themselves with alcohol show less power of resistance against influences unfavorable to health, and are carried off by diseases which other people of the same age pass through safely—especially in cases of inflammation of the lungs.—BIRSCH HIRSCHFELD, M. D., in *Mittheilungen zur Bekämpfung der Trunksucht*.

ALCOHOL A CAUSE OF TUBERCULOUS DISEASE

There is good reason to believe that the use of spirituous liquors among the working classes of the country is productive of consumption and tuberculous diseases to an extent far beyond what is usually imagined. The blanched, cavaerous aspect of the spirit-drinker bespeaks the condition of his internal organs. The tale of his moral and physical degradation is indelibly written on his countenance. The evil, however, does not rest here, for by destroying his own health he entails on his unhappy offspring the predisposition to tuberculous disease.—SIR JAMES CLARK, M. D., F. R. S.

ALCOHOL AND CONSUMPTION

No one falls a victim to consumption so easily as the drinker, whether he drinks brandy water, or wine or beer in excess.—A. VOLLAND, M. D., in *Die Lungenschwindsucht*.

ALCOHOL PREDISPOSES TO TUBERCULOSIS

The fact that alcohol predisposes to the contagion of tuberculosis has not been contested by any one. It has been pretended that rum, brandy, wine and beer are useful in the amelioration and cure of diseases of the chest and tuberculosis. Dr. Thiron, of the Faculty of Medicine in Paris, considers that nearly all these cases simply add alcoholism to an already possessed disease, and thereby hasten a fatal termination.—AUGUST FOREL, M. D., Zurich.

ALCOHOLIC PNEUMONIA

Taking pneumonia as an example of this class of disease, there can be no doubt that the alcoholic patient has not merely an appreciably less chance of recovery, but an apparently comparatively slight attack becomes one in which the chances of recovery come to be against the patient rather than in his favor.—G. SIMS WOODHEAD, M. D., London.

NICOTINE THE POISONOUS AGENT IN CIGARETTES

In condemning the use of cigarettes it is sufficient to recognize nicotine as the poisonous agent, although other injurious agents may also be present. During the last few months I have seen five cases of atrophic catarrh and congestion of the larynx and trachea causing cough in young men addicted to excessive cigarette smoking. As this atrophic rhinitis occurred in all five cases with the same symptoms, I attribute it to the cigarette habit. In this habit the tobacco smoke penetrates nose and trachea usually, and it is to be expected it would cause irritation and drying up of the secretions.—C. C. RICE, M. D. in *Medical Record*.

SMOKING PREVENTS PROPER OXYGENATION OF THE BLOOD

The practice of inhaling the smoke so constantly, as is the habit of the cigarette smoker, has the effect of keeping the lung tissue thoroughly impregnated with it, and prevents the blood from becoming properly oxygenated. This will account for the offensive odor that invariably encircles the cigarette smoker, prominent in breath and perspiration, and shown also in the peculiar sallowness of the skin, in the lack-luster expression of the eyes, and in the listless manner that betokens the characteristic physical enervation of this class of patients.—C. SPENCER KINNEY, M. D., Asst. physician to New York State Hospital for Lunatics.

The use of tobacco not only lessens the effi-

ciency of the respiratory movements and the internal distribution of the oxygen, but it exerts a special deleterious influence on the heart, often disturbing the uniformity of its rhythm and impairing its force, and not infrequently causing sudden death by cardiac paralysis.—N. S. DAVIS, M. D., LL. D., F. R. S.

EFFECTS OF NICOTINE ON THE BRONCHIAL TUBES

Nicotine acts as a mechanical irritant to the mucous membrane of the bronchial tubes, and if a bronchitis be present it maintains an irritable state of the membrane and keeps up the cough. Thus by lessening the bodily vigor the person is unable to withstand disease, and, if he inherits weak lungs, may easily become a prey to tuberculosis. — *Quarterly Journal of Inebriety*.

HABITUAL SMOKERS LIABLE TO COLDS IN THE HEAD

Habitual smokers are notoriously liable to colds in the head and to bronchitis and other congestive affections of the air passages. On this subject Dr. J. F. Rumbold says: "The congestion occasioned by the action of tobacco on the mucous membrane of the superior portion of the respiratory tract resembles in many respects the congestion resulting from the effects of a cold. Some of these are transitory and some permanent. The local effects of tobacco on the mucous membrane of the superior portion of the

respiratory tract cause a more permanent relaxation and congestion than any known agent. Tobacco depresses the system while it produces its pleasurable sensation, and prepares the mucous membrane to take on catarrhal inflammation from even slight exposure to cold.—*British Medical Journal*.

Through a typographical error the grammar lesson last month was stated to be for the fourth year. It should have read for seventh or eighth year work as stated in the table of contents.



"The minstrelsy of shining pools," in which "Earth's silence lives, and throbs and sings."

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APRIL'S RETURN

A FLUSH is on the woodland,
A song is in the hedge;
The meadow wan is fair again,
For April keeps her pledge.

A thrill with every heartbeat,
A rapture touched with sighs;
New lustre on the soul of life,
Tears in my happy eyes.
GRACE RICHARDSON, in the *Atlantic*.

WRONG IDEAS CORRECTED

EDUCATORS NOT LACKING IN PATRIOTISM

IT is a proud fact in our history that in any emergency our nation has never appealed in vain to any class of its citizens for service or sacrifice. Witness the blood-stained snows of Valley Forge, the Revolutionary battlefields, the weather-beaten flags now floating over the graves of hundreds of thousands of brave men who gave their lives in our civil war and later for the freedom of Cuba. Assured of like co-operation from the men and women in educational ranks, our nation has put one of its gravest problems into the hands of its public school teachers for solution.

No one can deny that the evils of intemperance are the greatest peril, outweighing all others, that menaces modern civilization. These evils constitute a menace that is too grave to be ignored. They challenge the attention of the people of the United States who have come to see that reformatory measures are in reality only ambulance work, picking up the dead and maimed, mitigating without preventing the evil, and that as the people make the laws, prohibitory action until a majority want it, is not possible. Hence, an educational method, as universal as the whole people, has been legally adopted by the entire country, i. e. the study of temperance physiology by "all pupils in all public schools."

TOO MUCH TIME IS NOT REQUIRED

The object of this study being to guide the

child in the formation of personal habits which are continually forming, new ones each year, as the pupil progresses, the law specifies that this subject, instead of being massed in one or two years, shall be taught "all pupils in all schools;" in other words, through the grades.

The clause "all pupils in all schools" presupposes that the study shall be carefully graded, beginning with the first primary, and presenting fresh matter each year until every pupil has mastered as much of the topic as is adapted to the grade he is passing through.

Experience has shown that three lessons per week for a minimum of ten or a maximum of fourteen weeks, or one term of each year through the eight school years, omitting the ninth if the study is continued the first year of the high school, will cover the topic.

The Massachusetts law, in requiring that this study shall be taught "as a regular branch," that is in the same manner as other regular branches, requires that where other regular branches, as arithmetic and geography, are taught orally, as they always are in the three primary years, this study also is to be thus taught, but with books in the hands of pupils in grades above where books are furnished pupils in other regular branches.

This plan requires as a minimum only 180 formal lessons, with physiologies in the hands of pupils beginning with the fourth school year, and omitting such formal instruction during either the ninth year or the first year of the high school.

Furthermore, these lessons are in the whole subject of physiology and hygiene, not more than one-fifth of which would be temperance matter. From 500 to 900 text-book lessons in the less important study of geography are often given in the same time. The specification of text-books as one source of information for pupils does not mean that such books are to be used for memorizing the text, any more than a geography in the hands of the pupil implies such a method in that study. The attempt to make it so appear is one of the false charges promulgated for a purpose by the enemy. The reasonable requirements specified for this branch in Massachusetts, are in general, the same as are now required for all pupils in all the public schools of this republic.

The expectation that a better knowledge of the laws of health, together with those relating to alcoholic drinks and other narcotics, will result in better obedience to those laws, and therefore to better habits, is being realized, with a good prospect that the perils of intemperance will be more and more decreased.

A QUESTION OF NATIONAL WELL BEING

This study, as we have seen, is closely con-

nected with individual and national well being. It appeals to the teacher's interest in the pupil's future, to the Christian spirit that seeks to save, as well as to the patriotism that makes no compromise with the greatest enemy of our government of the people.

In view of this, the rumor seems incredible that the educators, superintendents of schools and others, in Massachusetts, are so indifferent to the crisis that is upon us and its demands that they are not in sympathy with the temperance education law of the state and its enforcement as outlined above. This crisis in our midst is intensified by the fact that 61 1-2 per cent of the present population of this state is either foreign-born or the children of foreign-born.

A committee of twelve made up of educators and representatives from three different temperance societies are at work upon a course of study in temperance physiology for the schools of Massachusetts.

We are asked to recommend taking away books as one source of information on this subject, from pupils in the fourth year, and in addition to consent to all formal study whatever of the subject being withheld from pupils during the fifth and sixth years. No systematic study until the seventh year means that many pupils would leave school before getting it at all, and that many of those remaining in school until they have reached these grades will already have formed the cigarette habit, and some of them a liking for cider, wine or beer before they have had this study that warns against their use. Such a proposition, which is a clear violation of the spirit and letter of the law, is urged as necessary to meet a state of dissatisfaction among educators, who, it is claimed, "need to be pacified." Why they need to be pacified I am not able to learn.

My own frequent and most friendly correspondence with men in educational work in all parts of our country, including Massachusetts, does not indicate such general antagonism on the part of educators, as this which we are urged to pacify at the expense of this education which the law demands for grades of pupils where it is most needed.

Friends of temperance education are aware that for several years a small coterie, for the most part outside of the body of professional teachers, has been endeavoring by misrepresentation and otherwise to stir up the teachers to unite with them in trying to get such modification of the present temperance education law as would practically nullify its requirements. Thus far the teachers have shown no disposition to assist them. Instead, they have modified resolutions asked for in such a way as to express their desire to co-operate with the Woman's Christian

Temperance Union, and their sympathy with the temperance education movement.

For all these reasons it appears an injustice to the educational men of the state to represent them as demanding for their "pacification" concessions in carrying out the very moderate requirements of the law for the education of the children on this subject, concessions which would take from the children formal definite instruction during some of the most important years of life.

THEY WOULD FORGET

"WHY do you teach arithmetic in the fourth year and in every year through the grammar grades?" I asked a fourth grade teacher in a Boston school.

As though amazed at the lack of intelligence implied in the question, she answered, "We want these children to be able to earn a good American living and to do that they must understand arithmetic."

"But is it necessary for them to have it every year? Why not omit it every other year, say in the fifth and seventh years?" I asked.

More amazed still at my apparent lack of common sense, bending toward me as though in making me understand the absurdity of my question she was protecting her pupils from the poorhouse, she said, "Why, if you should omit that study every other year they would forget. Nobody but a lower grade teacher knows how soon children forget."

"Then you think a study that is expected to influence the lives of children should be pursued every year through the primary and grammar grades?"

"Yes," she answered.

"Would not that be a repetition that the children would tire of?"

"Not if the subject is well graded and the teacher is any good. Children do not tire of a subject that is taught properly."

That is just my view applied to temperance physiology. Fourth grade lessons will not hold a boy as the new temptations of the fifth year appeal to him unless these are supplemented by the more advanced lessons of the fifth year. Neither would sixth year lessons hold the seventh year pupils if the study were omitted then. "They would forget," as that bright fourth year teacher said.

There is no year below the ninth where the study of temperance physiology can be omitted without danger to the child and through him to the state.

CHILDREN OF MANY COUNTRIES

VIII. SOUTH AMERICA

YOU all have studied in your geographies about the wide plains of the three great South American rivers and perhaps have worked hard to learn their names, the *llanos*, *pampas*, and *selvas*.

The South American boy who lives on the *llanos*, the plains of the Orinoco in Venezuela, is called a *llanero*, as is his father who is a herdsman caring for the great herds of cattle that roam over the plains. Baby *Llanero* is born in a rude one-roomed hut having little furniture, and he gets very little attention from his family. The cradle in which he lies most of the time is simple enough, merely a bullock's hide the corners of which are drawn towards each other by four strips of hide, and the whole affair containing Master Baby swings from the roof of the cabin.

As soon as he can walk, even in his play, he is trained for the life he must lead when he is grown up. He has a little lasso made of twine with which he tries to catch small birds or the dogs, thus gaining skill for using the real lasso by and by. By the time he is four years old he rides horseback, and soon is very useful to his father in helping drive the cattle into the corral. As he grows older and stronger he has another amusement, the breaking in of wild colts, and from that time on his highest ambition is to outdo all his companions in feats of strength and skill.

If he gets hungry during the day he visits what is called "the cow-tree," and cutting into its trunk, he gathers in his gourd-shell a juice which much resembles milk in appearance, has a pleasant taste, and, like milk, grows yellow and thick at its surface after standing awhile.

While *Llanero* is amusing himself in learning to ride and shoot and to manage cattle and horses, his sisters have to help their mothers at home, although, as you may imagine, there is not much housework to do. Sometimes they do the family washing. They have little to make this easy, no hot water, soap or tubs. Instead, they carry the bundles of clothing on their heads to some near-by stream, and there in the cold running water the clothes are rinsed and pounded and rubbed upon the rocks (if there are any), then spread on the grass to dry. Even in the cities of Venezuela it is said that the washerwomen can find no use for such modern improvements as washboards, clotheslines or clothespins, preferring to spread the washing on the grass or a pile of stones.

The herdsman of the plains of the Amazon in Brazil are called *gauchos* and their children live much like the *llaneros* in Venezuela. The *gaucho*

boy lives in a hut made of brushwood covered with mud, the roof covered with straw or hides, and a hide hung in place of a door. As he grows to manhood, he is a very gay figure as he dashes over the plains on his fleet-footed horse. He wears large loose trousers which are sometimes embroidered, sometimes bordered with a fringe; he has a coarse jacket which, as well as the trousers, is trimmed with silver buttons; around his waist is wound a wide sash, and over all is his poncho.

The poncho is worn in several South American countries, so you may like to know how it is made. It is very simple. A blanket or large square of cloth has a hole cut in the centre through which the head is thrust. Then the folds fall around the arms and body and keep one warm and dry. Is that not an easy way of making and putting on a coat? The best ponchos are made of hair from an animal something like a camel, are light yellow in color, and are very much prized because they last for generations. It is said that the South American Indians so much covet a genuine poncho, that they would have no hesitation in killing a person wearing one for the sake of obtaining it.

The Indian boys and girls who live along the banks of the Amazon are quiet little people. As babies they get little more attention than the *llanero* children, but grow up as best as they can, and about as they please, are timid, gentle, obedient and not at all inquisitive. An Amazon Indian boy would never think of making a hole in the head of his drum (if he had one) to find out where the noise came from, nor would his sister pour the sawdust from her doll, in an attempt to learn of what her doll is made. These children have few games and amusements, but the boys have their bows and arrows and soon become skilled in bringing down small game. Sometimes they help their fathers catch in the river the turtles and alligators which they use for food. The turtles are very large, often three feet across. Turtle eggs which are found in the sand are used for making a kind of oil or butter.

The wildest tribes of Indians delight greatly in bright feathers, from which some make necklaces, bracelets and leg-bands; others make aprons and capes, and as the South American birds have gorgeous plumage it is very easy to get the feathers for this work. You see these Indian children have no Bands of Mercy yet. Birds of almost every hue abound in the forests, especially parrots whose gay colors are said to "seem like sunshine in the shades of the trees," and humming-birds which are "gorgeous specks of all colors of the rainbow."

Girls in Brazil who become nuns in the convents make flowers out of feathers. "The brilliant or delicate tints of every flower that

grows in Brazil can be matched exactly in birds' feathers. The nuns make lovely hyacinths, orange blossoms, violets and roses, and sometimes it is only by smelling of them that the real flower can be distinguished from the artificial."

Would you like to see one of the city children of South America? His black mamma has a white cloth bound about her head turban-fashion, above which, on top of her head, is skilfully balanced a large tray of bananas. About her is folded a gaily striped garment, perched in the back of which is Pickaninny, his black little face shining with glee, and five wee black toes sticking out under each of his mother's elbows. By and by, when he is old enough, he will be a water-carrier, a fish-monger or a dealer in poultry.

"The fish dealers announce their coming by sounding wooden clappers. The poultry is carried about in covered straw baskets, and it is a funny sight to see a sober black face shaded by such a basket through the crevices of which the chickens are popping their heads. The birds cluck anxiously and gaze around as if trying to discover what is to become of them."

There are white children in these cities too, whose homes and dress are much like those in the warm countries of North America. Sometimes in Rio Janeiro these children visit the beautiful botanical gardens and run up and down the long avenue of palms. For a whole half mile these trees extend in a straight line from the gate, each tree eighty feet high and three feet in diameter. "As you walk down the gravel path, the trees before you seem to blend with one another so that you appear to be inclosed in a gray-walled corridor roofed with green."

South American children have all sorts of means of travelling and of carrying baggage. On the plains they ride horses. In crossing the mountains the patient, sure-footed mule is used, or the llama, a graceful little beast with a head like a camel, a body like a sheep, and feet and

legs much like a deer. The llama is not sulky-looking like a camel. "When you load a camel he cries like a baby. The tears roll down his cheeks, and, as he marches off, he pants and groans." The llama behaves much better. When his load is too heavy, he kneels down and pleasantly but firmly refuses to move until his load is lightened.

Some of the mountains may be crossed in steam cars. In Valparaiso, Chile, our friends may ride in street horse-cars and pay their fares to the young women conductors; while, in some

cities, the mothers still go shopping or calling in old-fashioned sedan-chairs carried by their servants.

Do you remember how the children in India and China studied aloud in school? Your teacher shakes her head at you if you do this, but evidently it is a favorite method in more than one part of the world.

Here we are over the mountains in Ecuador. "Imagine some thirty little urchins each wearing a red poncho, and each studying aloud in a sing song tone on the go-as-you-please plan. The schoolroom is out of doors, sheltered only by some ragged straw thatching. The scholars sit on the ground while the master strides up and down swinging a long whip in his hand. He is very gracious and evidently very proud of his school." Not all the schools in South America are like this one. There

are many, especially in Chile and the Argentine Republic, which are carried on like your own, and little by little good schools will be provided for all the children in these countries.

If the children in this school were in Colombia, a little farther north, they might be obliged to take sudden recesses for the benefit of the ants. There are all sorts of ants in Colombia which are a constant annoyance to the people, but there is one black ant which is very business-like in its methods and not wholly disliked. When an army of them sets out to go to any particular place, it insists on following exactly the route it has chosen, whether it be through



The palms form "a gray-walled corridor roofed with green."

houses or over people, and there is nothing to do but to stand aside and let them go their way, knowing that when they have passed on, as they will have done in two or three hours, they will have cleared out all the beetles and scorpions which have been torments for weeks. So if we see a sudden fluttering of small red ponchos from the rude little school house, quite likely it may be rightly guessed that the children are giving an army of ants the right of way.

Professor (lecturing)—“Oxygen, gentlemen, is essential to all animal existence; there could be no life without it. Strange to say it was not discovered until a century ago when—”

Student—“What did they do before it was discovered, professor?”—*Puck*.

Never yet was a springtime,
Late tho' lingered the snow,
That the sap stirred not at the whisper
Of the south winds sweet and low;
Never yet was a springtime
When the buds forgot to blow.

—MARGARET SANGSTER.

Alden, seven years old, woke up the other morning and remarked: “Mamma, my hands were washed last night before I went to bed, and now they are dirty. The dark must have got on them.”

NATURE'S RESURRECTION

THE air has a flutter of spring
And exquisite odors float by;
The golden-brimmed daffodils swing,
The purple-sad hyacinths sigh,

And behold, 'neath the sparkle of dew,
In the shimmer of sunlight divine,
I have seen through a rapture of blue,
As if April's soul into it grew,
The soul of a violet shine;
The soul of a violet shining through sunlight
and dew.

The delicate white clouds cling
To the breast of the turquoise sky,
And the bluebirds, ablaze with the spring,
To the spring in the heavens draw nigh;

And behold, 'neath the sparkle of dew,
In the shimmer of sunlight divine,
I have seen through a rapture of blue,
As if April's soul into it grew,
The soul of a violet shine;
The soul of a violet shining through sunlight
and dew.

—MRS. WHITON-STONE.

BOOK NOTICES

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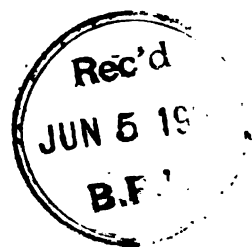
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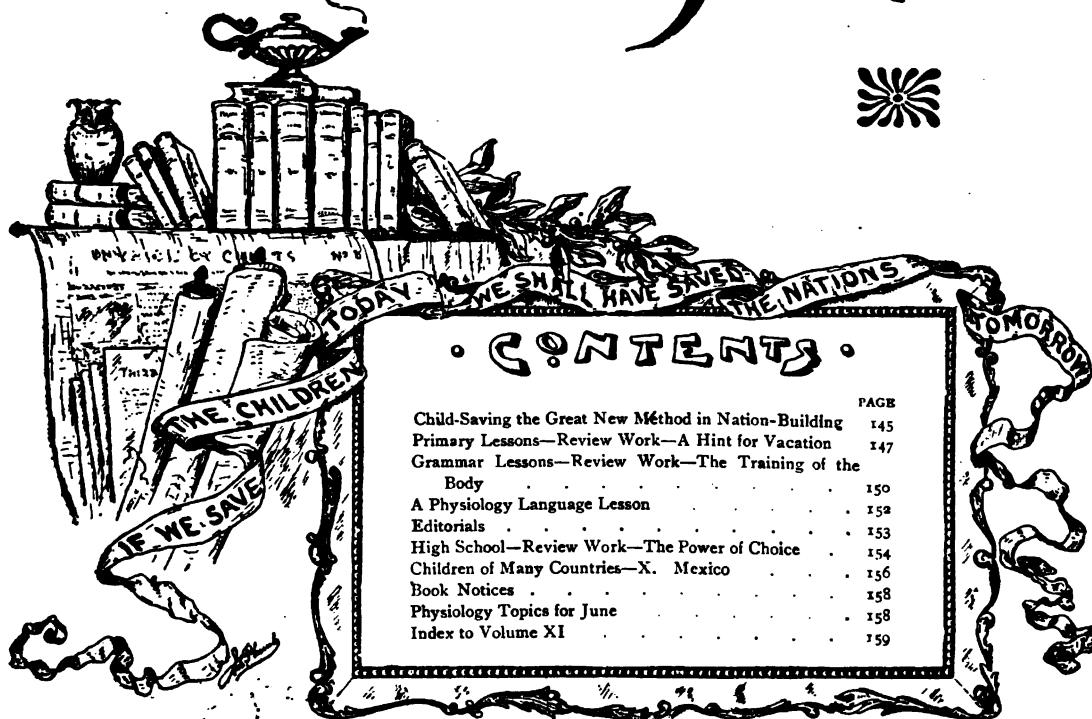
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School Physiology Journal

Vol. XI

BOSTON, JUNE, 1902

No. 10

A JUNE MORNING

Day!

Faster and more fast,
O'er night's brim, day boils at last:

Boils pure gold, o'er the cloud-cup's brim
Where spurting and suppressed it lay.
For not a froth-flake touched the rim
Of yonder gap in the solid gray
Of the eastern cloud, an hour away;

But forth, one wavelet, then another, curled,
Till the whole sunrise, not to be suppressed,
Rose, reddened, and its seething breast
Flickered in bounds, grew gold, then over-
flowed the world.

ROBERT BROWNING.

CHILD-SAVING THE GREAT NEW METHOD IN NATION-BUILDING

THE destinies of states and nations often turn on what at the time, to the unthinking, seem unimportant decisions. Mr. Walter H. Page, in an able article in the *May Atlantic*, after dwelling on the relation of public education to economic forces and the diversity of industrial pursuits, shows that other industries, besides the growing of cotton by slave labor, would inevitably have followed if Jefferson's scheme of universal public school education had been carried out. Instead, it was voted down by the Virginia House of Burgesses, in 1776, because the rich planters said: "Universal education would enable all to acquire property, which was not the will of God who said, 'The poor ye have with you always'".

But for that unfortunate vote, "the whole course of our history might have been changed." Jefferson's proposition implied more than even he dreamed. The school and schoolmaster, instead of bullets and bayonets, might have settled a problem that cost this nation four years of bloody war. The greatest need of this government of the people always has been and always will be such constructive statesmanship as can see and make others see that right education concerning pending problems is a greater source of strength to a republic than even its armies and navies.

Alcohol, with its inherent power to destroy self-control and to make the drinker its bond slave, with the degeneration that follows, and the legalized saloon that thrusts this poison as a

beverage upon our people are the greatest of all foes to the liberty and prosperity of which we boast, and will be until the people know better than to drink and legalize the sale of alcoholic beverages.

Anything that tends to emphasize the public school education now required for every child in the country as to the evil nature and effects of alcoholic drinks and other narcotics, and to ensure that every child shall get it, is hastening the peaceful overthrow of the alcohol slavery. Anything that diminishes in the least the effectiveness of that special education is by so much prolonging the reign of alcohol and fastening its chains upon more victims. Hence it is something to be thankful for that the Committee of Twelve for making out a course of study in temperance physiology for the public schools of Massachusetts, after prolonged discussion, voted to incorporate necessary temperance matter with the physiology and hygiene in each of the the primary grades; to have such elementary anatomy and physiology in the fourth year as are necessary to an intelligent understanding of the facts of general hygiene, including the temperance matter suggested for that grade; and to recommend books for pupils sufficiently advanced to use them. The course of study for the grammar and high school grades is to be announced later.

As a sample of the foreign additions being made to our population, the *May JOURNAL* referred editorially to a single ship which had just arrived in Boston with 2,600 immigrants from southern Europe, to add their old world drinking customs to the present saloon supporting majorities of this country; to the fact that the children of these people must be taught total abstinence with other laws of health if they are not to fasten the saloon upon us for all time; and to the fact that if they are thus taught it must be in the primary and fourth and fifth years of school, because they do not stay in school in large numbers beyond these grades.

All this is powerfully emphasized by the arrival, since that editorial was written, of 25,120 immigrants during the seven days alone ending May 5, 12,140 coming in one day. 178,804 have come to us since January of this year, thirty thousand more than for the same period in any previous year. No wonder the newspapers call it "an invasion," for more foreigners have arrived in the last four months than the whole population of any one of the three western

states, Wyoming, Nevada, or Idaho; more than the entire population of any one of the cities of Providence, R. I., Indianapolis, Ind., Kansas City, Mo., St. Paul, Minn., Rochester, N. Y., Denver, Colo., or of the combined populations of the cities of Worcester, Mass. and Savannah, Ga. Whole provinces in southern Italy are being depopulated by this emigration to our shores. Shall these people reproduce here the conditions they fled from, is a burning question involving destiny for us as well as for them.

Their tendency to stay in our great centers of population is a fact to be noted. Statistics show that a large proportion of the nearly 500,000 who came to us last year settled in the cities of Boston, New York and Chicago. In view of this, whether the future city, and in many cases the state, governments in our coun-

tions, and that therefore in the fourth year, in addition to oral instruction, he should have a text-book in arithmetic? Would you not also vigorously oppose the idea that arithmetic should be omitted in the fifth year as a regular study for this boy?

The same reasoning applies with more force to the study of temperance physiology, for the alcohol habit is the greatest of all foes to industrial and all other forms of success. In addition, it is an acknowledged fact that few teachers are qualified to teach this subject successfully without books. Carefully grade the subject so that new matter with its lessons of warning and guidance shall come to the child each year, and the promise, "The truth shall make you free," will not lack fulfilment.

I never hear the question concerning this



"Never a ripple on all the river. Only the shadows tremble and quiver,
Neath the balmy breath of a day in June."

try are to represent the American idea of self-control, or the Italian idea of the stiletto incited by alcohol, will depend whether temperance physiology is faithfully taught these children in the grades of school they attend, namely, the primary, with the best helps for the teacher, and in the fourth and fifth years with books as well, adapted to grade for pupils' use. The children of American parentage need this study in the primary grades as well as in the subsequent years to prevent the formation of wrong habits and as a guide to right ones.

If you knew a boy would leave school before the sixth year, would you think that oral instruction in arithmetic in the three primary years would be enough for him? Would you not say that to earn an honest American living such a boy should have every possible help in the study that was to teach him to make accurate calcula-

instruction in the lower grades lightly discussed, without thinking of the great need for every child that this instruction shall keep pace with his habit-forming years; and of what this tremendous immigration means to the future of our country, if the children are not taught this subject, without being reminded of the words of the great Teacher who, in seeing the end from the beginning, said to the trifiers of His time, "If thou hadst known in this thy day the things which belong unto thy peace!"

If this study had never been required in the lower as well as in the higher grades of school throughout the country, its effects upon our industries and health statistics, and our ranking among the nations for sobriety would not be what they are today. It is because we have been so teaching all pupils in all schools that these blessings have come.—MARY H. HUNT.



A HINT FOR VACATION

AN old Greek myth tells the story of a famous wrestler who was invincible as long as he remained in contact with his mother, the earth, no matter how strong his opponent might be, or how often he himself was thrown.

There is a modern significance to this old tale. Nature is the alma mater of us all, and at frequent intervals everybody must get back to her to renew his strength. Especially is this true of her youngest offspring, the children.

If the year's lessons in hygiene have been well taught, even primary pupils have learned much of the usefulness of the body and its parts; how to sit, stand and control their movements; the most vital needs of the body, and some of the requisites to its highest development.

These closing days of the school year are the time to put such truths into larger practice, rather than to inculcate new precepts. Soon the child's schoolroom will be either fields and woods, or the city streets. Why not prepare now for this season when he is to be his own teacher, by leading his activities into channels which will mean a definite gain in manners and morals as well as health, instead of the loss it so often is?

Ask each to choose some live creature which he wants to know more about. This may be a bird which has built its nest close to his home, a colony of bees, a rabbit, or squirrel, but whatever is chosen should represent the child's deepest interest for the time.

The selection made, tell him some of the things to find out about it: for instance, what it does, and how it does it; what it eats, and where it gets its food; its habits and mode of life, what it is good for. In every case, have the child notice how perfect everything in the animal world is of its kind. Each animal's body is exactly fitted to its needs, and is never abused. All animals live simple, regular lives. Their work is the best possible. Such study is habit-forming, for in thus bringing the child near to nature, morals as well as health are quickened, and he is given fresh impetus in the right direction.

FIRST YEAR

What are the main parts of the body?

Tell some of the ways in which we can take care of the body.

Why should the body be kept clean?

What does the body need to make it grow tall and strong?

How do cigarettes hurt the body?

What is the work of the teeth? Why do they need to be brushed after each meal?

Why should we learn to use the left hand and arm as well as the right?

What are the most important things in the top story of our bodies?

Why do we call the eyes, nose, mouth and ears the gateways of the body?

How should we guard these little gateways?

What are some of the best foods for children?

What foods are better for hot weather than for cold?

Name a good use and a bad use of grains.

Why should we eat grapes and apples and not drink wine and cider?

AUTHORITATIVE QUOTATIONS

Cider is not a harmless beverage. It contains alcohol like all fermented liquors, and from taking this small amount the formation of a permanent craving and an alcohol habit has often been developed. The alcohol contained in any alcoholic liquor is, when introduced into the body, capable of poisoning it.—H. F. HEWES, M. D., Instructor in Physiological and Clinical Chemistry, Harvard University.

All drinks which contain alcohol make one less strong, less quick and less alert. People who use alcoholic drinks are more likely to get sick than are persons who do not use them.—W. S. HALL, Ph. D., M. D., Professor of Physiology, Northwestern University Medical School.

People who indulge in the habit of drinking beer, cider, wine, or any other of the weaker fermented liquors, are quite likely soon to acquire an appetite for stronger drinks.—W. E. BALDWIN, M. D.

Smoking, to the slightest extent, is productive only of injury to young people, by checking their physical and mental growth.—*Dietetic and Hygienic Gazette*.

Tobacco is always useless, often harmful, and sometimes homicidal. It is, of course, a poison . . . As for cigarettes, the filth sold as such is beyond description.—*London Lancet*.

SECOND YEAR

A glass of beer costs as much as a glass of milk. Why is it not just as good to drink?

Why is it dangerous to drink even a little liquor that has alcohol in it?

What are some of the reasons why we need food?

Why is it not good to eat between meals?

How should the teeth be taken care of?

What does the sense of taste do for us?

Why do we need to train this sense?

What kind of voices do we like best to hear?

How can we get such voices?

Why is it better for the eyes to sleep in a dark room?

Why is it that many railroads will not allow their workmen to use tobacco?

AUTHORITATIVE QUOTATIONS

Many regard beer as a substitute for milk. The only similarity is in the amount of sugar and water contained. In this respect they have nearly the same composition. But beer has only a trace of nitrogenous matter and of fat, both important constituents of food, and it has considerable alcohol. Those who drink beer do not drink it for its water or sugar. These they can get more cheaply in other ways. They drink it for its alcohol alone. Beer is then no substitute for milk as a food. Beer is a delusion. Pure milk from healthy cows is a true food.—*Journal of Hygiene*.

Ethyl alcohol, even when diluted as in wine, beer and cider, is a poison which changes pathologically the tissues of the body and leads to fatty degeneration. The smallest doses, half a liter of beer or a glass of wine, are also poisonous.—AUGUST FOREL, M. D., Zurich.

Alcohol always does harm, whether we call it a poison or not, in proportion to the amount taken. And one of its worst effects is its tendency to create a craving for larger quantities.—*Temperance Record*.

Diseases of the eye are sometimes caused by the use of alcoholic liquors. Alcohol and tobacco cause dimness of vision. The use of tobacco may seriously injure the sight.—W. S. HALL, Ph. D., M. D., Professor of Physiology, Northwestern University Medical School.

The deleterious effects of tobacco, on the system in general or on the eyes, are due, as we all know, to the presence of a poisonous ingredient called nicotine. This oily, colorless fluid diffuses itself into the blood with as much rapidity as prussic acid, and a poisonous dose has been known to kill an adult in three min-

utes. The cheaper grades of tobacco contain more nicotine than the dearer ones, and consequently are more injurious to the consumers. This is probably one reason why tobacco blindness is more common among the poorer classes than among the rich. The tobacco used for chewing purposes is usually very rich in nicotine.—FRANCIS DOWLING, M. D., in *Journal of Am. Med. Ass'n*.

The amount of nicotine derived from a cigar in smoking is somewhere in the neighborhood of one per cent. A dose of one-thirtieth of a grain will produce toxic symptoms in the body, so that we need absorb only a small proportion of the amount actually taken in during the process of smoking a cigar or a pipeful of tobacco to reach the limit.—J. W. SEAVER, A. M., M. D.

Boys that form the tobacco habit at an early age are stunted physically, and never arrive at normal bodily development. Accompanied with the use of the narcotic in the case of several hundred boys examined, was defective eyesight.—H. H. SEERLEY, Prin. Iowa State Normal.

THIRD YEAR

Why are boys and girls who drink beer likely to be stunted in their growth?

Name one game and one kind of work both of which are good for the muscles of the arms.

How should one sit and stand to have healthy lungs and a well developed chest?

How are the front teeth unlike those farther back in the mouth? Why do not all the teeth have the same shape?

Why does a person have to chew his food while a hen swallows hers whole?

What becomes of the food we eat? What does the blood do with the food that is eaten?

Name one use of the bones and one of the nerves.

What are some of the ways in which cigarettes hurt the body?

AUTHORITATIVE QUOTATIONS

Children of alcoholic parents, trained to the early use of liquor, are stunted in their growth, and a French physician is inclined to ascribe to this fact the decrease in the standard of normal height shown by statistics in that country.—*Journal American Medical Association*.

The alcohol in beer produces drunkenness just as it does when taken in any other form, and as beer and ale contain from 3 to 12 per cent of alcohol the amount ingested will depend upon the kind and amount of beer drunk. 4 per cent beer may produce unlimited alcoholic intoxication. There can be no doubt that many

hereditary appetites for alcohol are first aroused by drinking beer.—JOHN MADDEN, M. D.

Alcohol can not be regarded as a food, and can not, therefore, either strengthen or nourish the body. Hence, there can be no such thing as *nourishing* stout or ale. It is also physically impossible for red claret or any other wine to "make blood," as certain vendors would have us believe—*Temperance Record*.

A boy who interferes with the development of his tissues by the use of tobacco must carry these undeveloped parts all his life, as they can not grow after the period of growth and formation is past. Faulty nutrition of the bones, from the use in youth either of alcoholic drinks or tobacco, prevents their full development, and consequently affects the stature.—H. F. HEWES, M. D., Instructor in Physiological and Clinical Chemistry, Harvard University.

It is truly melancholy to witness the great number of the young who smoke nowadays, and to contemplate how many promising youths must be stunted in their growth, and a physical and mental wreck before arriving at man's estate. Look at the pale young face, imperfect development, and deficient muscular power of the cigarette fiend. The action of the heart and lungs is impaired by the influence of the narcotic on the nervous system, but a morbid state of the larynx, trachea and lungs results from the direct action of the smoke. The voice is observed to be rendered hoarser and of a deeper tone.—T. H. MARABLE, M. D., in *Journal of Inebriety*.

Taking 4 per cent as the average proportion of nicotine, we find that the ordinary smoker is daily exposed to rather more than 20 grains of one of the deadliest poisons known to science. To be sure, only a small percentage of this poison finds its way into the patient's system. That a certain quantity of nicotine does enter the circulation, both in chewing and smoking, is shown by its speedy and marked effects in those not

habituated to the use of tobacco.—*Dietetic and Hygienic Gazette*.

A Russian physician examined a number of students to ascertain if their health was affected by tobacco. Of the smokers 16.09 per cent were found to have some affection of the breathing organs, while only 10.69 of the non-smokers were thus affected. In respect to diseases of the digestive organs the figures were respectively 11.88 for those who smoked and 9.92 per cent for those who did not, and of both tracts combined, 8.77 for the smokers, 3.22 per cent for the non-smokers.

In every case for many years, when careful examinations have been made as to the comparative health of smokers and non-smokers, or their standing in their studies, or their skill in gymnastic feats, or in athletics, the latter have had an advantage over the former. These figures show the evils of tobacco better than anything else. Tobacco lowers the physical and mental standard of the man. He is simply less capable than he would be. This is all there is of it.—*Journal of Hygiene*.



"I guess we won't take but t-t-ten cents worth this time"

THEIR MONEY'S WORTH

The twins had large ideas about learning to swim, but their first glimpse of the ocean was almost too much for them. They played up and down the beach but could not be persuaded to step into the water.

At last Papa offered them fifty cents apiece if they would take a good plunge. That was an inducement, and both boys made a brave attempt. But their fears returned as soon as they felt the water on their ankles, and back they ran to shore, Alfred crying out: "I guess we won't take but t-t-ten cents worth this time."

"Primrose-eyes each morning ope
In their cool, deep beds of grass;
Violets make the air they pass
Tell-tales of their fragrant slope."



THE TRAINING OF THE BODY

A REPRESENTATIVE from the British education department recently visited this country to examine the methods in use in our schools, and carried back the report that "the United States has become convinced that only the possessors of healthy, vigorous bodies are likely to be the possessors of vigorous minds." Our educational policy has been largely shaped in accordance with this conviction, hence the study and practice of hygiene have a definite place in the public school curriculum.

With such education assured, the most important consideration is how to make it appeal to our pupils. A great incentive is of the first importance. When Lord Roberts was summoned to go to South Africa, he said he had led an abstemious life for nineteen years in the hope of that day. "From the time of Majuba Hill he had foreseen the final clash of British and Dutch in South Africa and had so-lived his life as to be ready to serve when the clash came."

In no country in the world are such opportunities open to young people as in the United States, but even here only those are chosen to meet them who, like Lord Roberts, have "kept their muscle trained" till fate has found them worthy and summoned them to greater deeds.

We shall have done much for the pupils of our grammar schools if they go out from the grades convinced of this truth, that only the fit are wanted in any department of the business world. Even with such preparation they may be called only to humble pursuits, but without it they are doomed to certain failure. In any case, they are ready for emergencies which may arise, and which may lift them in a moment to the highest pinnacle of success.

Make this thought the keynote of review work, how the body may be best developed and why one should aim at securing its utmost efficiency for his own sake as well as on account of the work he hopes to do.

FOURTH YEAR

Why does every one need a good supply of pure water every day?

How does the food we eat become a part of the body?

Why is apple-juice healthful as one gets it in the apple, and harmful after it has been pressed out and allowed to stand in a warm place?

What is there in beer and cider which makes them dangerous drinks?

What holds the body in place? What parts of the body enable it to move?

Why is the beer-drinker likely to have less strength than the water-drinker?

How can one make muscle?

Why is the cigarette-smoker usually weak and lazy? Why is he so often at the foot of his class?

What do we learn through each of the senses? How can they be trained to better work? What are some of the ways in which they may be harmed?

AUTHORITATIVE QUOTATIONS

One of the worst features of the use of alcohol and other narcotics is their tendency to be required in ever increasing doses. Ninety-nine out of a hundred drinkers began with an occasional glass of beer, but after a while they had to have their tippie regularly—noon, afternoon and night—and more of it.—AUGUST FOREL, M. D., Zurich.

It is not only the concentrated alcoholic liquors that cause heart and kidney trouble, but pre-eminently the continued moderate use of beer. Nothing, from the physician's standpoint, is more false than the belief that the progressive dislodgment of other alcoholic drinks by beer will diminish the destructive influence of alcoholism.—GUSTAV VON BUNGE, M. D.

A slight injury to beer-drinkers, a severe cold, a shock to the body or mind, will frequently provoke acute disease, ending fatally.—*Medical Pioneer*.

Both tobacco and alcohol diminish nerve sensibility and muscular strength, and favor fatty and other tissue degenerations, in direct proportion to the quantity used.—M. A. WILLARD, M. D.

Too often is the use of tobacco an introduction to the use of alcohol. It is very natural to associate wine or beer with cigars. It is a question whether it does not play as important a part in the causation of organic disease as alcohol. It produces results permanently detrimental to health and vigor of the individual.—CHAS. H. SHEPARD, M. D.

The use of cigarettes is always harmful and never beneficial. They possess no virtue, but are inherently bad, and bad only. Beyond question, their every tendency is toward the impairment of physical health and mental vigor. They are wholly noxious and deleterious to health.—JUDGE CALDWELL, in *Journal of Inebriety*.

Tobacco in itself contains—no matter how small a portion—an active poison, a narcotic, which readily affects the brain.—I. N. LOVE, M. D., in *Journal of American Med. Ass'n*.

FIFTH OR SIXTH YEAR

Why are bones of different sizes and shapes needed in the body? What kinds of food are needed to make bone? How is the growth of the bones affected by the use of cigarettes?

Why is the man who drinks beer less able to do hard work than one who does not?

Name one of the lines of work in which one must be able to think quickly and accurately. Why is the drinker not wanted in such employments?

How does one form habits? Why is it so hard to stop smoking after one has formed the habit?

What different kinds of work are done by the brain and nerves? How does the use of tobacco affect the nervous system?

How is the waste of the body got rid of? How are the breathing organs injured by the use of tobacco?

What is one cause of color-blindness?

Why do tobacco users usually drink as well?

Why do non-smokers usually get on better in school and at work than smokers?

AUTHORITATIVE QUOTATIONS

After an observation of thirty years, I find in the majority of instances the moderate use of light wines and beer leads to the excessive use of the same, as also to the use of stronger drinks. Therefore, the use of such lighter drinks is dangerous.—J. T. KENNEDY, M. D.

For all purposes of sustained, enduring, fruitful work, it is my experience that alcohol does not help but hinders it. I am bound to say that for all honest work alcohol never helps a human soul. Never! Never!—SIR ANDREW CLARK, M. D.

Alcoholism diminishes the rapidity of thought; it provokes explosions of bad passions and dispositions; predisposes to assaults and crimes; interferes with habits of industry and perseverance.—PROFESSOR SIKORSKI, in report of the Russian Commission for the study of Alcoholism.

The best medical testimony in the world is agreed that the use of tobacco produces pale-faced, peevish, irritable, hectic, dyspeptic men and boys with weakened nervous systems and failing hearts. It not only enfeebles the nervous system, but produces the same effect upon the muscular organism also. It produces dryness of the throat, bronchitis, cancer of the lips, mouth, tongue, throat.—D. H. MANN, M. D.



"Sweet flower faces,
With their coy and dainty graces,
Lure us to their hiding places."

Heart disease is on the increase. Loss of eyesight has reached an alarming stage. A large per cent of these cases can be traced to the use of tobacco and nicotine poison. The tobacco habit stimulates the appetite for alcoholic drinks.—C. H. ST. JOHN, D. D., M. D.

Tobacco is doubtless a poison, and it causes much nervous suffering and damage to the sight, hearing and taste.—AUGUST SMITH, M. D.

While many smokers reach old age, many people do not live to old age because they are smokers. In higher schools non-smokers get on better than smokers, children from nine to fifteen years of age who smoke showing less intelligence and laziness. Adults are liable to cephalic pressure, insomnia or its converse (sleepiness), melancholy, aversion for work, and dizziness.—T. H. MARABLE, M. D.

A PHYSIOLOGY-LANGUAGE LESSON

Sight	}	Five Senses
Smell		
Touch		
Taste		
Hearing		

muscles	arms	}	Alcohol
veins	chest		
arteries	spinal column		
heart	skull		
corpuscles	blood		

Given : the above plan.

Wanted : A sentence about each word, telling facts about our bodies. Also a fact about alcohol.

We had this lesson one day, and it gave so much real pleasure to the children in the lowest grades—from the first to the third—that I repeat it here for the benefit of other teachers.

Some of the sentences were these :

The *heart* is the engine of the body.

Using dumb bells develops your *muscles*.

The *veins* carry back the dark *blood*.

The *arteries* carry the light *blood* from the *heart*.

One tiny boy wrote, "The *veins* carry the *blood* from my *skull* to my *heart*."

There were no two sentences alike about alcohol. It was most pleasing to read the facts as they were written. I feel it helped the whole school to state a fact about each word given, more than to write a story about any part of the body.

MARGARET H. J. EATON.

[Will not other teachers send us bits from their personal experience in teaching temperance physiology? *Ed.*]

AT SCHOOL AND AT HOME

My teacher doesn't think I read

So very special well ;

She's always saying, "What was that

Last word?" and makes me spell

And then pronounce it after her,

As slow as slow can be.

"You'd better take a little care"—

That's what she says to me—

"Or else, I'm really 'fraid you'll find,

Some one of these bright days,

You're way behind your primer class,"

That's what my teacher says.

But when I'm at my grandpa's house

He hands me out a book,

And lets me choose a place to read,

And then he'll sit and look

At me and listen just as pleased—

I know it from his face—

And when I read a great long word,

He'll say, "Why, little Grace,

You'll have to teach our district school

Some one o' these bright days!

Mother, you come and hear this child!"

That's what my grandpa says.

—*Child's Hour.*

CANOE SONG

Dip ! Dip !

And I thrill with the start—

For the ripples run and the waters part

At the song the paddle sings.

Drip ! Drip !

And lo, it brings

The word of a sweet command to me,

And leaping to answer it — I am free !

Water-weeds weaving in vain to stay me.

Fain, fain

Are the reeds arrayed at my prow to delay me—

Vain, vain,

They cast their lure and they bid me bide,

For the paddle swinging along my side—

Dip ! Dip !

Hath a dearer bribe than the still things know,

And I go. I go !

* * *

Glide ! Glide !

Across the calm of the evening tide,

When the first white stars begin.

Creep ! Creep !

Where the lilies sleep—

Stars in a sky as soft, as deep—

The paddle singing me in.

Hush ! Hush !

For the tall reeds brush

My side as though they love me.

Rest ! Rest !

On the inlet's breast,

With the roof of the leaves above me.

—ARTHUR KETCHUM, in the *Atlantic*.

A teacher in civil government had told his pupils that once in ten years the state of Massachusetts takes a census. Little James, who is an attentive scholar, upon being called up to recite, said : "Once in every ten years Massachusetts comes to its senses."—*New York Tribune*.

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He fails not—he who stakes his all
Upon the right and dares to fall.
What though the living bless or blame?
For him the long success of fame.

—RICHARD WATSON GILDER.

THE BIRTHDAY OF A NATION



CAPT. ALFRED E. HUNT

THE 20th of May. This is Cuba's natal day. As I write, there looks down from above my desk the pictured face of a precious only son, who said in response to my tears over the prospect of his being exposed to the dangers of the

Spanish war:

"Mother, from my babyhood you have taught me to love liberty and to obey the call of duty. The sword, it seems, must be unsheathed for freedom for Cuba, and my country calls. Do you bid me stay?"

Cuba is free. The mediæval tyrannies of Spain are driven from the western hemisphere. On this day, when that is consummated for which he gave a strong, young, achieving life, with the flowers he loved I wreath his last words cut in granite in yonder cemetery:

"The Spanish war was for the extension of the principles of liberty for which every American should be willing to sacrifice, if need be, even life itself."

Who can say that upon the rejoicing today in the "Pearl of the Antilles" there is not looking on an invisible host of Christian heroes who fell

at Santiago, while climbing the heights of San Juan with the stars and stripes, and of those who came home after the struggle was over to fall later from the tropical exposures of camp and field and sea? To those who have sealed the emancipation of Cuba with their life blood, the joy of seeing that accomplished for which they laid down their lives will be more than human recognition could afford, for the joy of the better land is in the measure of service for others, rather than in even the just recognition of personal sacrifice. There are no controversies there over who shall wear the brightest laurels.

Men tell us that the friendship of the United States with Germany and England, and England's treaty with Japan in the Orient mean that war will be no more. God grant that earth's battle-flags may forevermore "be furled in the federation of the world," and that the future's victories may be the triumphs of reason in the calm hours of peace!

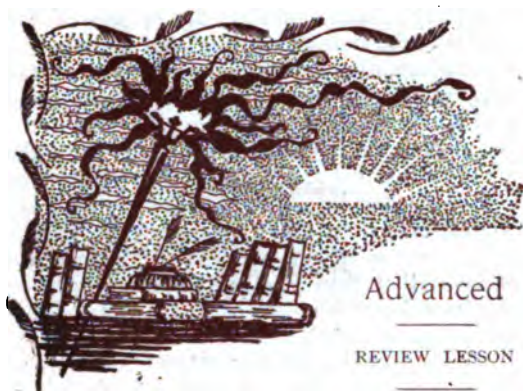
One of the leading temperance workers of Michigan, in a recent letter to Mrs. Hunt, sends this cheering word: "The teaching of Scientific Temperance in the old district school made a crank of me, and I suppose you are largely to blame."

His "crankiness" is shown by the effective way in which he and the organization he represents are enforcing the temperance education law of their state which went into effect in 1883, Michigan being the second state in the Union to adopt the educational method for the prevention of intemperance.

With just such "temperance cranks" now being made in every state and territory of our country, it is small wonder that business is being reorganized on total abstinence principles, that our supremacy in trade is widely acknowledged, and that the average length of human life is increasing.

In an editorial in the April JOURNAL the statement appeared that the temperance people of the Massachusetts Committee of Twelve, at work upon a course of study in temperance physiology for the schools of Massachusetts, had been asked "to consent to all formal study whatever of the subject being withheld from pupils during the fifth and sixth years. No systematic study until the seventh year means that many pupils would leave school before getting it at all."

This last sentence should have read, "No systematic study of the effects of alcoholic drinks and other narcotics until the seventh year means that many pupils would leave school before getting it at all."



THE POWER OF CHOICE

LESS than a generation ago a high spirited youth stood at the parting of the ways.

On the one hand, were the fairest prospects which family position, wealth and education could offer. On the other, the glitter and sparkle of the wine cup and its kindred attractions which he had already begun to love.

His arrest last fall in the streets of New York as a half-starved vagrant, and his committal to the insane ward of a hospital tell but too plainly the story of his choice, from the consequences of which not even the fact that he was a lineal descendant of a signer of the Declaration of Independence had power to save him.

He, perhaps, might plead ignorance of the dangers inherent in the moderate drinking of any alcoholic beverage. Not so the youth who faces life today. He may be of the lowliest parentage, without money or influence, but if we, as teachers, have lived up to our duty and privileges he will not leave his school days behind him without knowing well the pitfalls which beset his path and being wise enough to avoid them. Such knowledge is the first step towards success. The next great essential is continued practice in making right choices until the act has become habitual.

Perhaps in no other way can the closing lessons of the year be made more valuable to advanced pupils, many of whom are now in school for their last term, than by emphasizing the fact that moral as well as physical strength comes through repeated effort. He is the strong man who can say *no* and keep on saying it.

With this thought in mind, make the nervous system the starting point for all reviews in physiology for upper grades, considering:

How it is made up, and the reasons for its complex structure.

Its various functions. Its relation to the work of every other part of the body.

Its needs, and how these needs are met.

The failure of alcohol and tobacco to meet the needs of the nervous system.

The positive harm done by the use of these narcotics directly to the nervous system, and indirectly through their effects on other organs of the body.

Their effect in weakening the will.

The quotations which follow may be used in connection with these topics to confirm the statements of the books, or as supplementary material for study and discussion.

AUTHORITATIVE QUOTATIONS

ALCOHOL NOT A FOOD

In all labor two physiological elements are employed, the nerves to excite and the muscles to do; and both become exhausted in the exercise of their respective duties. The feeling of exhaustion or fatigue denotes waste of bodily structure through the expenditure of vital energy. The only way of repairing this waste, and replenishing this vital energy, is by food and rest. Alcohol can not, in any degree, supply either.—ANDREW BAXTER, M. D., Edinburgh.

ALCOHOL A DECEIVER

The most highly specialized characteristics are first impaired by the use of alcohol. . . . Then follows a distinct diminution in the power of rapidity and accuracy of perception. People imagine they can do a thing more quickly, that they are brisker and sharper, but exact measurement proves that they are slower and less acute.—G. SIMS WOODHEAD, Professor of Pathology, Cambridge University.

ALCOHOL LESSENS BRAIN ACTIVITY

Alcohol lessens the activity of the brain cells themselves by its direct action on them, even while it may be stimulating them by quickening the circulation.—LAUDER BRUNTON, M. D.

ALCOHOL WEAKENS THE HEART

Disturbed innervation and increased work are the two principal causes of an increase in the size of the heart. Certain poisons . . . appear to act in this way, as . . . alcohol and tobacco. The slow poisoning by alcohol is a very frequent cause of a gradual fatty degeneration of the heart.—WILLIAM OSLER, M. D.

ALCOHOL IN THE BLOOD

Alcohol in the blood diminishes the oxygen-carrying property, destroying the hemoglobin, and is followed by states of starvation. The waste products increase and the power of elimination decreases, hence all the processes of digestion are disturbed and altered. The waste

products are retained and become sources for the growth of pathogenic germs. Both the liver and kidneys are subjected to increased activity with diminished nutrition. The pathologic condition is clearly that of starvation and irritation which rapidly merges into inflammation and exhaustion. The products of these deranged metamorphoses become real poisons, and their presence in the system is marked by many and obscure symptoms.—T. D. CROTHERS, M. D., Supt. Walnut Lodge Hospital, Hartford.

CONSUMPTION OF ALCOHOL UTTERLY HAZARDOUS

There is evidence that the injury of a definite alcohol dose continues longer than a day, as well as that the long continued use, even in moderate amounts, progressively diminishes working ability and does not increase the mental power of resistance. All these appearances are seen in the drinker; hindrance of the power of conception, diminution of working ability, great irritability. Naturally there must take place in time serious disturbance of the brain cortex and we have innumerable evidences that this is the case in the high percentage of alcoholics among the inmates of the insane asylums.

What valuation has alcohol today? It is called a "care breaker," a spur to cheerfulness and enjoyment of life. But this animating and exhilarating action soon disappears with continued use, and in its place come inertia and apathetic lethargy. The continued consumption of alcohol is utterly hazardous. The wisdom of the total abstainer is demonstrable by scientific experiments. The clearer one becomes, concerning the disadvantageous psychical effects of alcohol, the more he discounts the supposed usefulness ascribed to it.

Thus scientific investigation, as well as the numerous other reasons which speak against the

use of alcohol, tell us that alcohol is no friend but a dangerous enemy which robs us of our wills, our moral sense and powers of resistance.—EMIL KRAEPELIN, M. D., Professor in University of Heidelberg.

EFFECTS OF DISTILLED LIQUORS COMPARED WITH FERMENTED

The various forms in which spirit is taken affect the question which organs will be specially attacked,—that of beer-drinking tends especially to injure the heart and kidneys, . . . while . . . the effects of brandy . . . show themselves more on the mucous membrane of the stomach, on the liver, and the brain.

CIGARETTES WEAKEN THE NERVOUS SYSTEM



"Down through the long colonnades
Of the dim sweet woods, of the dear dark woods,
Of the heavenly woods and glades."

The weakening of nutrition due to cigarette smoking, coupled with the constant cumulative nicotine poisoning, finally affect the whole nervous system, especially the brain, and ultimately the intellect and will. We frequently hear of the

death or insanity, which is worse, of some young man from the use of cigarettes.—CHAS. H. SHEPARD, M. D.

CIGARETTES DESTROY THE PHYSICAL SYSTEM

Cigarette smoking has an appalling effect upon the physical system. It sends boys into consumption. It gives them enlargement of the heart. I have seen bright boys turned into dunces, and straightforward, honest boys made into miserable cowards by cigarette smoking.—A. CLINTON, M. D., San Francisco.

CIGARETTES A MENACE TO INTEGRITY

I regard the cigarette as one of the greatest evils and curses that menace the health, happiness and intellectual and moral integrity of our boys.—E. S. STUVER, M. D., Sec. Medical Society of Wyoming.

CHILDREN OF MANY COUNTRIES

X. MEXICO

NO matter whether the tops of the bog mountains are white with snow, and the keen, cold wind is whistling through the valleys and across the wide plains, or the hot sun is scorching the brown, dry grass and shrubs and the oxen and burros are panting in the shade, you will never find the little Mexican children indoors. It is never too warm, never too cold, to lie on the ground in the dirt and play marbles, or to lean against some old stone wall or bough-house, for shelter.

The common people live in "dugouts," a few feet down in the ground, with one small room, making a tiny fireplace in one corner—where they cook in kettles and pans on the coals and ashes. The house is covered with pinion boughs, something like those of our pine trees, and on this brush are plastered mud and stones.

On the ground floor they lay sheep skins to sit on. Against the wall are piled narrow *colchons*, mattresses made of wool, and covered with blankets of every color. Here a whole family sleep and eat. The bough-houses spring up in a day. They cut down the trees, set the posts, weave in and out the boughs and branches, make a snug roof of leaves and mud, and before dark move in,—half a dozen children and an old grandmother, besides the father and mother.

The adobe houses are better, and sometimes have two or three rooms. I saw some little boys making adobe brick one day, treading the mud with their bare feet, then putting big pieces of it into a funny press, whence the mixture of straw and mud came out in brick shape, and was laid in the sun to dry.

The common classes are very ignorant and poor. The fathers spend their wages in gambling and drinking. The mothers are idle and dirty, with huts full of children, and very little money to buy them food or clothing. They are a careless, happy, good natured people, with little thought of the future.

I wish you could see the boys and their donkeys, "burros" as they call them. You would scream and laugh to see the small, spry Mexican catch his burro, spring on his back, sitting close to the donkey's tail, clutch his little brown hand into the shock of "mane," throw out his bare feet and legs, give a whoop or two, and trot off at a jog that I am afraid would make you feel very uncertain. Such a ducking of heads is seen as the determined little burros go over stones, under trees and *through* stone walls!

It is very hard for teachers in Old and New Mexico to interest the children in the plain studies we think most important. Among the rich in the city of Mexico, the little girls are

taught very early the pretty lace-making, embroidery and fancy work, while the small boys work in silver, draw and carve. They care little for hard study, and find arithmetic and grammar dull and uninteresting. The girls are closely kept at home like their handsome Spanish mothers. The little men look very funny in jackets and trousers covered with silver cord, wide hats and belts, and knives bravely sticking out of the sash or belt. Their ponies are small and swift, and they ride with a careless ease and grace peculiar to their people.

The little women who live in palaces—old and tumbled-down it may be—are carefully dressed in silks and embroideries, with tiny, gay-colored stockings and shoes.

The sun shines all the year round in Mexico; the air is very hot at midday, and grows chilly as the sun goes down. The people are truly children of the sun, with rich, warm, dark skins, black hair and eyes. One very proud mother came to see us with her baby dressed in long, white clothes, "comme la Americanos" (like Americans), and putting the small bundle into my arms, said in Mexican, "Ah, Senora! Ohos azul!" (eyes blue), and sure enough, out of the dark little face shone two blue eyes; just as sky-blue as yours, or those of my own grandchildren. The mother chattered away an hour, all about the wonder of the eyes of her baby, who looked "like her great-grandmother in Madrid!"

They are very fond of color and of dress. The poor children go in rags most of the time, but whenever they get a new calico dress or apron it is gay and bright.

A little American girl had a red sunbonnet sent her from Washington. You should have seen the picture as we saw it from our window, the fair, yellow-haired baby standing in the middle of her Oriental court—a dozen little black heads and shining faces, big, black wondering eyes, fingers touching the wide brim, the crown, the strings, and a babel of tongues chattering of "pappilino colorow" (sunbonnet of red). By the next day I had cut half a dozen red and blue sunbonnets. The mothers sewed well on sewing-machines, and easily made the garments we cut for them.

They have no good, restful Sunday like ours. In front of the great cathedrals and in the beautiful Plaza, women and children sell on Sundays the famous filagree and feather work, images and pigs, which they carry strapped across their backs. Handsome, graceful girls, wrapped in blue and scarlet "*mantas*," sell the fine laces and toys, while as soon as the morning mass is over, the streets are filled with match boys, ice cream boys and scores of others, for "bargains," trades and "*dinero*" (money). And oh, the pity of the bull fights, the gambling and drinking!

Among their pretty names are Lallio, Theresa, Kaphilena, Junita, Felipe, and Santa; they are so musical and soft to the ear. "Dear little friend," is simply "Amiguita," and "little girl," "Una Muchacha."

The children are fearless and daring. I must tell you about "Alessandro," a little fellow only ten years old, who used to drive and watch his goats as they nibbled the dry grass on the sides of the mountains and foot-hills. One bright morning, under the bluest sky, the little man trudged away as usual. The most dreadful snow-storm came in the afternoon, covering every road and path for many miles. It raged, and the wind blew, and darkness came, but no Alessandro. His father and friends started out on the best ponies and rode until the next morning. At last, tucked away under a shelving rock, fast asleep, was the little brown shepherd—his flock lost and gone, but his own face cheery and full of courage. He had tried in vain to find a path, then he crawled into this hole, built a little fire, prayed "Santa Maria" to keep him, and fell asleep.

You would be surprised to hear their hymns, so pathetic, slow and strange; not much like your merry, cheery songs. They are all fond of music. The men play well on the violin, guitar and zither, in Spanish fashion, while the little ones dance like gypsies. They have a great many "baylies," or balls, where the entire family go together. If the baby is too small to sit up, it is tenderly held by the mother until her turn comes to dance, then the father sits down with the little bundle in his arms, or gives it to some friend. They are very kind to one another, seldom abusing their children, as people of some other nations do.—MARGARET SPENCER, in *Child Life Abroad*.

"A noise like of a hidden brook
In the leafy month of June
That to the sleeping nooks all night
Singeth a quiet tune."

VACATION TIME

THE grammars and the spellers,
The pencils and the slates,
The books that hold the fractions
And the books that tell the dates,
The crayons and the blackboards,
And the maps upon the wall,
Must all be glad together,
For they won't be used till fall.

They've had to work like beavers
To help the children learn;
And if they want a little rest,
It surely is their turn.

They shut their leaves with pleasure,
The dear old lesson
books,
And the crayons and
the blackboards
Put on delighted
looks.

So, children, just remember,
When you are gone
away,
Your poor old slates and
pencils
Are keeping holiday.
The grammars and the
spellers
Are as proud as proud
can be
When the boys forsake
the schoolroom,
And the teacher turns
the key.

Harper's Young People.

"Molly, I wish you would be a better little girl," said an Austin father to his little daughter.

"You have no idea how sorry I am that mamma has to scold you all the time."

"Don't worry about it, pa," was the reply of the little angel; "I am not one of those sensitive children. Half the time I don't hear what she says."

Little Flossie had been sent to the drug store to get some dyestuff and forgetting the name of it she asked: "What is it folks dye with?"

"Oh, various things," replied the druggist. "Heart failure, for instance."

"Well," said Flossie, "I suppose that will do. Give me three cents' worth, please."—*Ex.*



A Mexican family going to market

BOOK NOTICES

NATURE STUDY AND LIFE, by Clifton F. Hodge, Assistant Professor of Physiology and Neurology in Clark University. With an introduction by Dr. G. Stanley Hall. Price \$1.50. Ginn & Company, Boston.

One of the most notable nature-study books now published. It has twice formed the basis for nature-study courses in the Clark University Summer School; it has further stood the more practical test of teachers' institutes in various states; and finally, its most important suggestions have been tried thoroughly in the school-room.

The author takes up concrete lessons on the animals and plants that form the natural environment of the home, and group themselves most closely about the life and interests of the child. Each form is studied alive and at work, as a life story to be read at first hand in nature and especially in its relations to man. The illustrations, largely from life, are of unusual value and interest.

THE MARTHAS VINEYARD SUMMER INSTITUTE begins its twenty-fifth annual season, July 1, 1902. An unusually attractive course has been arranged, with able instructors. As no preparation for class work is required, teachers will find ample opportunity for rest and recreation in a most delightful summer resort, while at the same time obtaining professional improvement. Certificates of attendance will be issued and are given due credit by many superintendents towards obtaining teachers' certificates. For full particulars address W. A. Mowry, Hyde Park, Mass.

On July first, **THE AMERICAN INSTITUTE OF INSTRUCTION**, the oldest teachers' organization in existence will convene in Burlington, Vermont, for its seventy-second annual meeting. Situated on the shores of Lake Champlain, and within easy reach of many points of historical interest, as well as the beautiful scenery of the Adirondacks, Burlington offers great attractions to the tourist and teacher alike. Round-trip tickets will be issued.

The number and value of our thoughts determine our value to society. No investment pays so well as an investment of brains. In a western camp one miner put his lower brain into the pick-ax and earned three dollars a day; another miner put his higher brain into the stamp-mill and earned fifty dollars a day. The riches were not in the stamp-mill but in the thoughts that handled it.—*Educational Gazette*.

DAYBREAK

The east is blossoming! Yea, a rose,
Vast as the heavens, soft as a kiss,
Sweet as the presence of woman is,
Rises and reaches, and widens and grows

Large and luminous up from the sea,
And out of the sea as a blossoming tree,
Richer and richer, so higher and higher,
Deeper and deeper it takes its hue;
Brighter and brighter it reaches through
The space of heaven and the place of stars,
Till all is as rich as a rose can be,
And my rose-leaves fall into billows of fire.
JOAQUIN MILLER.

The man who is content to fill a position in life which requires no preparation, no study, no training, must be content as well with the wages of a menial. To secure the richer and lasting rewards of life, character, mind, money, or position, the man must pay the price of severe training and thorough preparation, though it costs years and much money.—*Selected*.

A COMPETENT ARTIST

Polly sat drawing at her little desk,
A thoughtful wrinkle on her baby brow;
She drew an animal of form grotesque,
And calmly stated, "Auntie, that's a cow."

"It is, indeed, a charming cow," I said;
"But cows have legs, and yours has none, my pet;"
"I know," said Polly, nodding her wise head,
"But, Auntie, they are in the pencil yet."
CAROLYN WELLS, in *Youth's Companion*.

"Under the greenwood tree
Who loves to lie with me,
And tune his merry note
Unto the sweet bird's throat,
Come hither, come hither, come hither,
No enemy here shall he see,
But winter and rough weather."

PHYSIOLOGY TOPICS FOR JUNE

PRIMARY—Review all Topics of the Year. Review Food, Fruits, Grains, Senses, Skin, Muscles, Bones, Brain, Nerves.

INTERMEDIATE—Review Fourth Year's Work. Review Second Half of Fifth Year's Work. Review all Sixth Grade Topics.

ADVANCED—Review Second Half of Seventh Year's Work. Review all Eighth Grade Topics. Review all High School Topics.

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